



Edd Clark & Associates, Inc.

Environmental Consultants

May 22, 2006

**Job No.: 0232,002.95**

Mr. Richard Winterhalder  
226 Preston Drive  
Cloverdale, CA 95425

**Report of January 2006 Groundwater Monitoring and  
Ozone System O&M through January 2006  
811 Irwin Lane  
Santa Rosa, California**

Dear Mr. Winterhalder:

Please accept this as Edd Clark & Associates, Inc.'s (EC&A's) report on the January 2006 groundwater monitoring and ozone system operation and maintenance (O&M) activities conducted through January 2006 at 811 Irwin Lane (site) in Santa Rosa, California (Figure 1). Groundwater monitoring is being conducted at the site at the request of the County of Sonoma Department of Health Services (CSDHS) because of a release of fuel hydrocarbons (FHCs) to the subsurface from underground storage tanks (USTs) formerly located at the site. A copy of this report will be sent to the CSDHS and the North Coast Regional Water Quality Control Board (NCRWQCB) for their review.

**Groundwater Monitoring**

Groundwater monitoring activities conducted for the January 2006 event included measuring depth to water (DTW) in MW-1, MW-2, MW-3 and MW-4 (Figure 2); collecting samples of groundwater for laboratory analyses from MW-1 through MW-4, onsite water-supply well DW-1A, and offsite water-supply well DW-3 (Figure 3); calculating groundwater-flow direction and gradient; evaluating the results of the analyses and calculations; and preparing this report.

**Groundwater-level Measurements**

On January 11, 2006, EC&A personnel measured DTW in MW-1 through MW-4. DTW below the top of well casing (TOC) in each well was measured to the nearest 0.01 foot (ft) with a water-level meter. The meter was cleaned and rinsed prior to taking measurements in each well. DTW was measured and recorded after the well caps were removed and groundwater in the wells was allowed to equilibrate for a minimum of 15 minutes. DTW in MW-1 through MW-4 ranged from 2.70 ft to 4.19 ft, and the groundwater-flow direction and gradient at the site were calculated to be N14°W at 0.011 ft/ft (Table 1 and Figure 4).

Groundwater Field Logs containing the DTW measurements are in Appendix A. DTW data will be electronically submitted to the State GeoTracker Internet Database.

Monitoring Well Groundwater Sampling Procedures

On January 11, 2006, EC&A personnel collected groundwater samples from MW-1 through MW-4. Prior to collecting samples, the wells were purged with a submersible pump. Purged water was checked for the presence of free-floating product; free-floating product was not observed in water purged from the wells. Groundwater pH, temperature and electric conductivity were measured after purging each well-casing volume. Samples were collected from the wells after the water level returned to a minimum of 80% of the initially recorded level and/or sufficient water re-entered the wells. Purge volumes and groundwater-quality parameters are recorded on the Field Logs in Appendix A.

Groundwater samples were collected in new single-sample, disposable bailers fitted with disposable bottom-emptying devices to minimize water degassing. The samples were transferred from the bailers to properly labeled, laboratory-supplied sterile sample containers, placed on ice and transported under chain-of-custody control to McCampbell Analytical, Inc. (MAI) for chemical analyses. MAI is a State-certified laboratory located in Pacheco, California.

Monitoring Well Sample Analyses and Results

Groundwater samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline (g) and benzene, toluene, ethylbenzene and xylenes (BTEX) by Analytical Methods SW8015Cm/8021B, and for methyl tert-butyl ether (MTBE) and other gasoline oxygenates and the lead scavengers 1,2-dibromoethane (EDB) and 1,2-dichloroethane (1,2-DCA) by Analytical Method SW8260B.

Diisopropyl ether (DIPE) was detected in the groundwater sample collected from MW-3 at 4.6 micrograms per liter ( $\mu\text{g/l}$ ).

TPHg, BTEX and 1,2-DCA were detected in the sample from MW-3 at concentrations of 890  $\mu\text{g/l}$ , 31  $\mu\text{g/l}$ , 2.0  $\mu\text{g/l}$ , 42  $\mu\text{g/l}$ , 90  $\mu\text{g/l}$  and 6.3 g/l, respectively.

The results of analyses of groundwater samples from the monitoring wells are summarized on Table 2. The sample results will be electronically submitted to the State GeoTracker Internet Database. A complete copy of the analytical laboratory report is included in Appendix B.

Water-supply Well Sampling

On January 11, 2006, EC&A personnel collected groundwater samples from onsite water-supply well DW-1A and offsite water-supply well DW-3, located at 4810 Occidental Road. The sample from DW-1A was collected from a hose bib by the appliance shop entrance, after the chlorination treatment system. The sample from DW-3 was collected from a hose bib on the north side of the pump house. Water samples from DW-1A and DW-3 were collected after purging each well by running the pump for a minimum of 15 minutes. The samples were collected directly in sterile, laboratory-supplied sample containers which were labeled, placed on ice and transported under chain-of-custody control to MAI for chemical analyses.

**Water-supply Well Sample Analyses and Results**

The groundwater samples collected from the water-supply wells were analyzed for TPHg and BTEX by Analytical Methods SW8015Cm/8021B, and for MTBE and other gasoline oxygenates and the lead scavengers EDB and 1,2-DCA by Analytical Method SW8260B.

None of the analytes tested for were detected in the groundwater samples collected from DW-1A nor DW-3.

The results of analyses of groundwater samples from the water-supply wells are summarized on Table 3. The sample results will be electronically submitted to the State GeoTracker Internet Database. A complete copy of the analytical laboratory report is included in Appendix B.

**Decontamination Procedures**

Sampling equipment was cleaned onsite with a low-phosphorous, soap-and-water solution and double rinsed with tap water. Decontamination water and water-supply well purge water were placed in covered, properly labeled DOT 17H 55-gallon drums for temporary, onsite storage.

**Ozone System Operation and Maintenance**

For this quarter, EC&A personnel conducted O&M visits on November 21, 2005; December 6, 22 and 28, 2005; and January 11,16, 17 and 18, 2006. The panel was inspected, checked for leaks and maintained as needed. DTW, temperature, dissolved oxygen (DO) and/or oxidation reduction potential (ORP) were measured in monitoring wells MW-1 through MW-4 when possible. Table 4 summarizes monitoring well groundwater DO readings and other O&M data. Table 5 is a log of O&M visits to the site.

**DO Measurements**

DO concentrations have increased overall in wells MW-1, MW-2 and MW-4 since baseline (pre-treatment) data were collected. DO has not increased overall in MW-3, which is located outside the zone of influence of the system. Since system startup on March 15, 2005, DO in MW-4, where high FHCs were consistently detected in the past, has ranged from 0.08 mg/l (April 6, 2005) to 5.70 mg/l (October 14, 2005). For the January 2006 event, the DO concentration was recorded at 0.31 mg/l.

**Conclusions**

Groundwater-flow direction at the site continues to be generally to the north-northwest. The only analyte ever detected in MW-1 was 2.1 µg/l MTBE in December 2000. Aside from a detection of 1,2-DCA in October 2005 (3.3 µg/l), MW-2 has been non-detect (ND) for all analytes for the past eight consecutive sampling events. In MW-3, minor concentrations of BTEX compounds have been detected sporadically; DIPE has been detected for every event for which it has been analyzed at concentrations ranging from 3.4 µg/l (April 2001) to 21 µg/l (July 2005).

Monitoring well MW-4, located within 10 ft down-gradient of the former USTs excavation, has had the highest concentrations of analytes detected at the site. Since the startup of the ozone system on March 15, 2005, concentrations of all analytes, except xylenes, have significantly decreased overall.

In October 2005, all analytes in MW-4 were ND for the first time since sampling began in July 1997. Figures 5 and 6 show groundwater elevations and TPHg and benzene concentrations over time in MW-4. Prior to October 2005, FHC concentrations in MW-4 were highest when groundwater elevations were low (November/December) and lowest when groundwater elevations were high (March/April).

MTBE and DIPE have never been detected in MW-4. TBA has been detected in groundwater from MW-4 at concentrations ranging from 7.4 µg/l (April 2005) to 95 µg/l (October 1999). 1,2-DCA has also been detected in groundwater from MW-4 at concentrations ranging from 6.3 µg/l (January 2006) to 150 µg/l (April 1999). For the January 2006 event, TBA was ND for the second consecutive event; 1,2-DCA was detected at 6.3 µg/l.

The general increase in DO and significant reduction of FHCs in MW-4 suggests that ozone injection is impacting groundwater in the vicinity of this well, where the greatest FHC concentrations have previously been detected.

### **Recommendations and Schedule**

Ozone system O&M visits should continue to be performed monthly as part of EC&A's regular O&M program to monitor and ensure that the ozone delivery system at the site is functioning properly. Quarterly groundwater monitoring should also continue at the site.

The next monitoring event for the site is scheduled for April 2006. The April 2006 event should include measuring DTW, DO, ORP and other groundwater-quality parameters in wells MW-1 through MW-4, and collecting samples of groundwater for laboratory analyses from MW-2 and MW-4, DW-1A and DW-3 (Table 6).

### **Limitations**

The conclusions presented in this report are professional opinions based on the information presented herein, which includes data generated by others. Whereas EC&A does not guarantee the accuracy of data supplied by third parties, we reserve the right to use this information in formulating our professional opinions. This report is intended only for the indicated purpose and project site. Conclusions and recommendations presented herein apply to site conditions existing at the time of our study. Changes in the conditions of the site property can occur with time because of natural processes or the works of man on the site or adjacent properties. Changes in applicable standards can also occur as the result of legislation or from the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control.

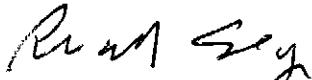
May 22, 2006

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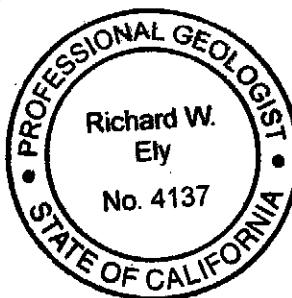
Edd Clark & Associates, Inc.

Thank you for allowing EC&A to provide environmental consulting services for you. Please call Lisa Scoralie, project manager, if you have any questions.

Sincerely,



Richard Ely, PG #4137  
Senior Geologist



Lisa Scoralie, PG #6101  
Project Manager



Attachments: Figure 1 - Vicinity Map

Figure 2 - Site Map

Figure 3 - Well Location Plan

Figure 4 - Groundwater Elevation Map, 11 January 2006

Figure 5 - Concentrations of TPHg in Monitoring Well MW-4

Figure 6 - Concentrations of Benzene in Monitoring Well MW-4

Table 1 - Water Level Measurements

Table 2 - Analytical Results - Groundwater Samples from Monitoring Wells

Table 3 - Analytical Results - Groundwater Samples from Water-supply Wells

Table 4 - Monitoring Well Groundwater Results for Dissolved Oxygen Measurements

Table 5 - Ozone System Operations and Maintenance Log

Table 6 - Groundwater Sampling Schedule for the Year 2006

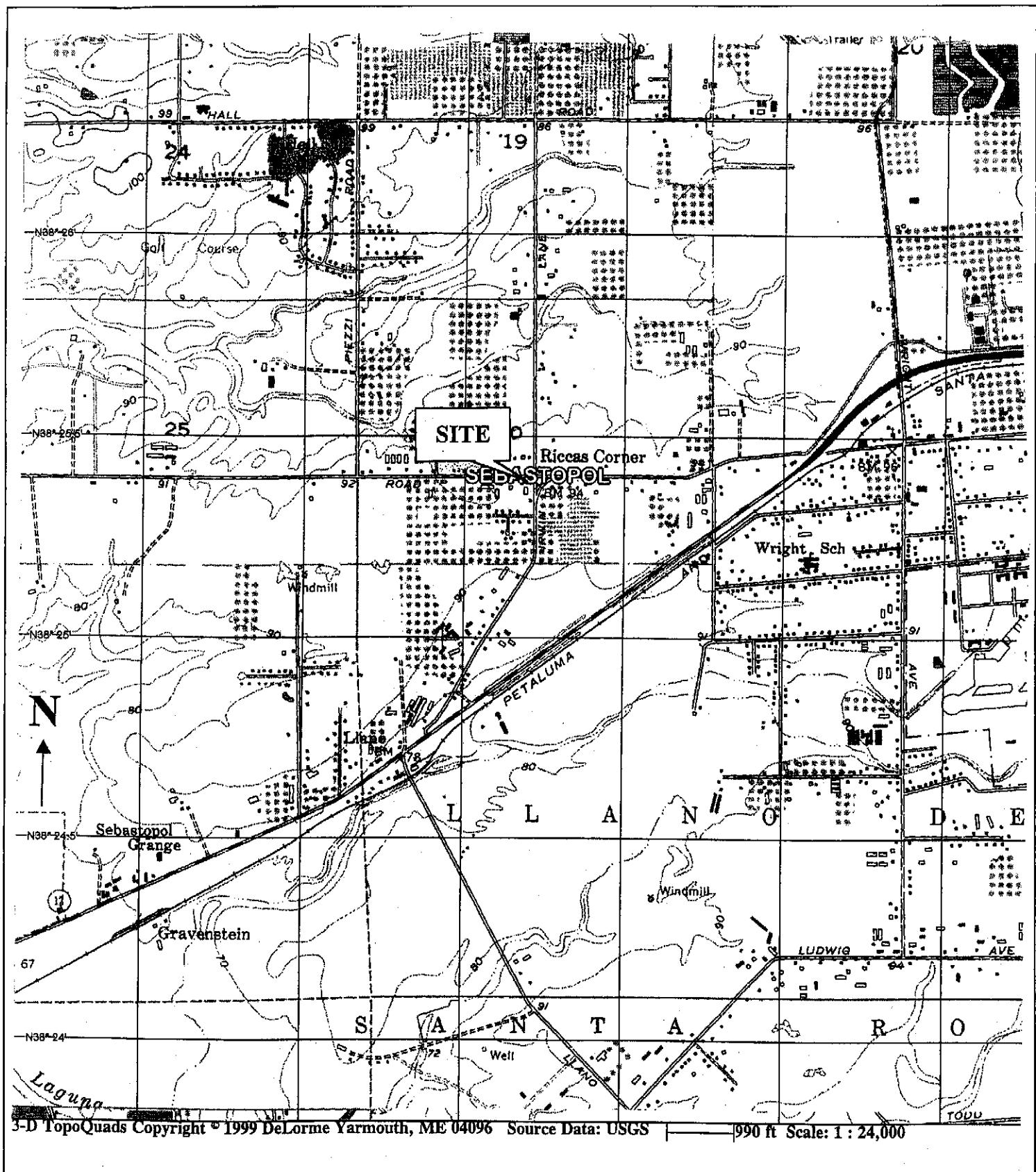
Appendix A - Groundwater Field Logs

Appendix B - Analytical Laboratory Report

Appendix C - Ozone System O&M Logs

cc: Cliff Ives, County of Sonoma Department of Health Services  
Luis Rivera, North Coast Regional Water Quality Control Board  
John Hogan, Hogan Properties

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**Vicinity Map**  
811 Irwin Lane  
Santa Rosa, California

# FIGURE 1

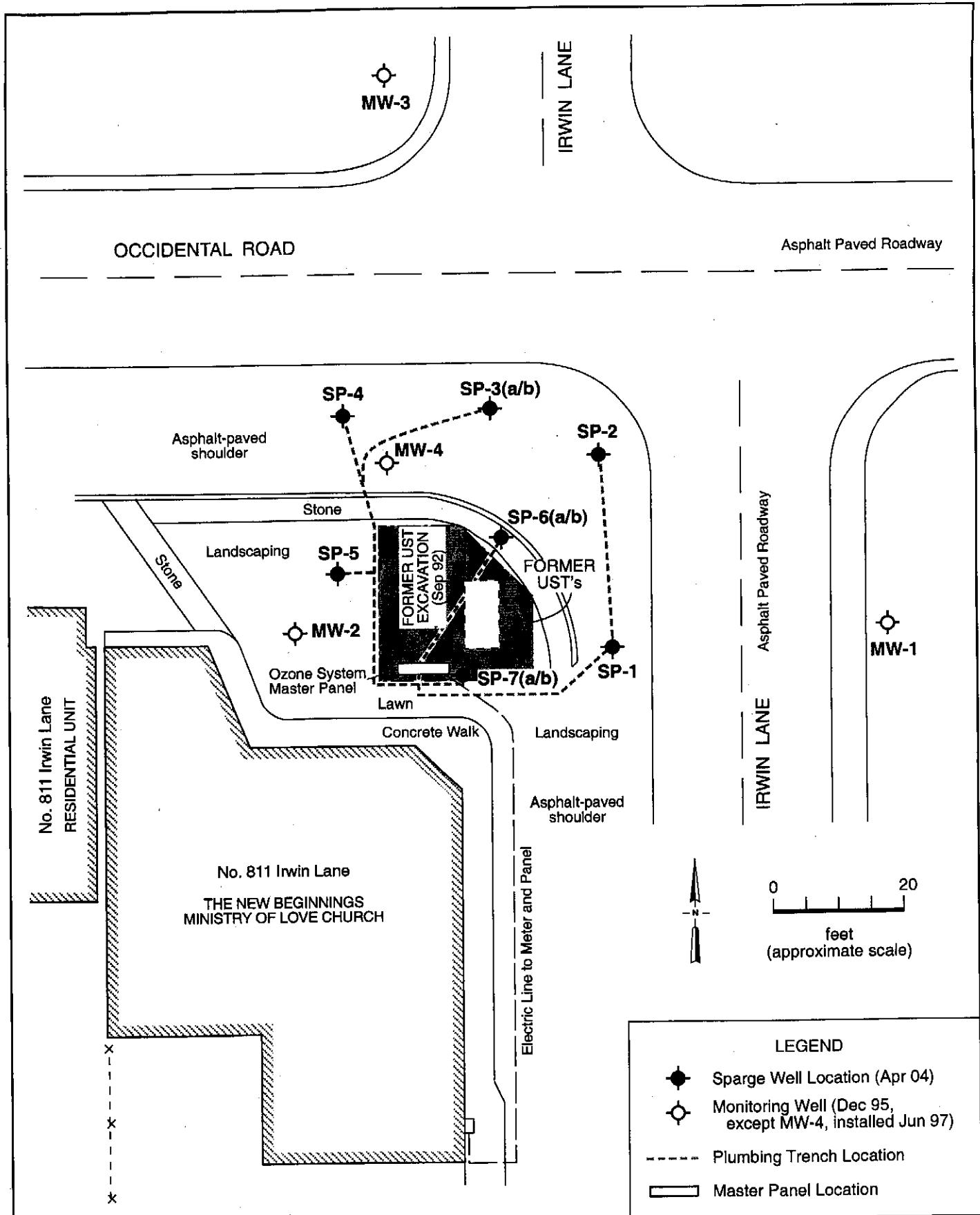
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0232,002.96

REVIEWED BY  
Lisa Scoralle

DATE  
10/05

**REVISED DATE**

REVISED DATE



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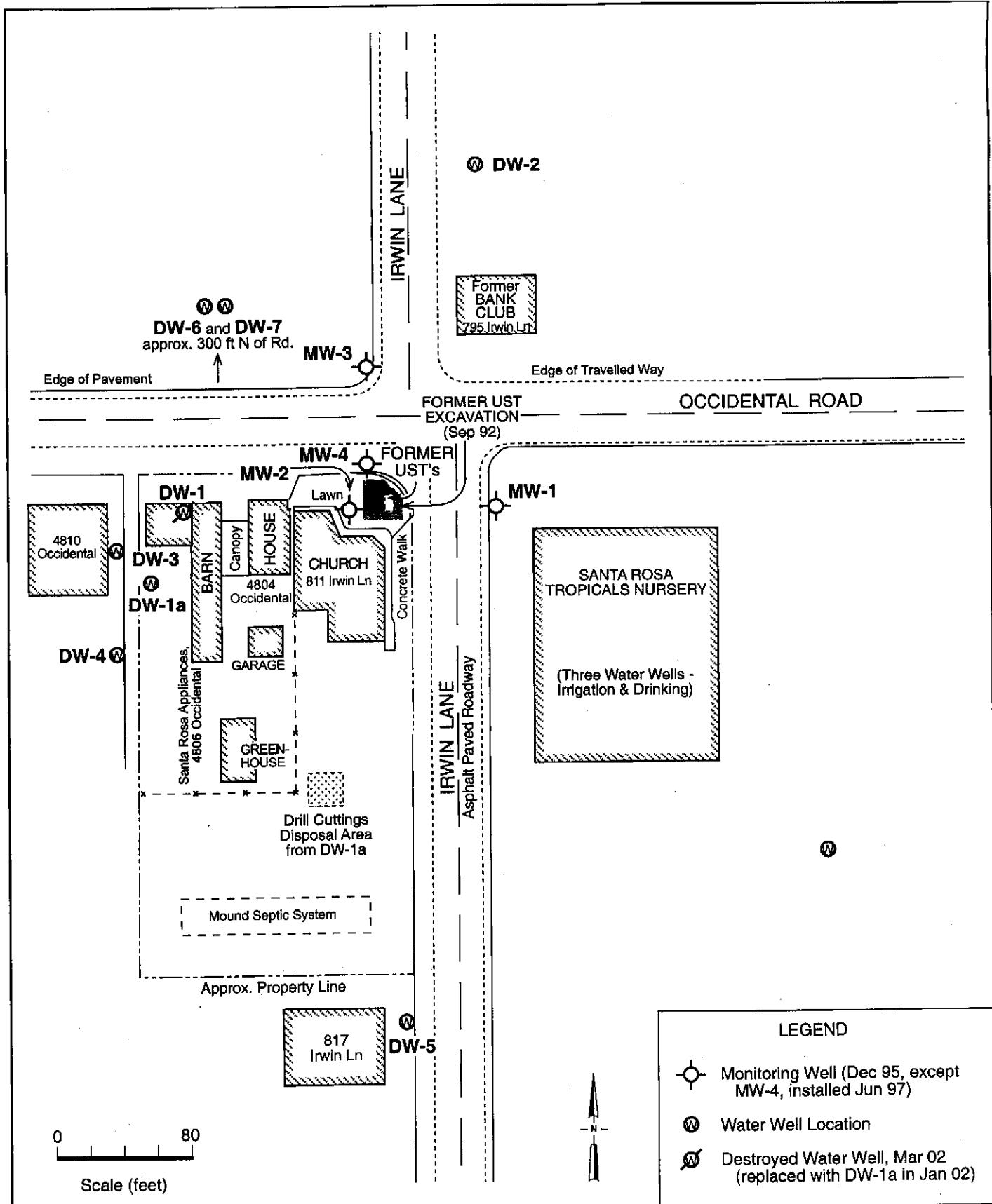
## SITE MAP

811 Irwin Lane  
Santa Rosa, California

## FIGURE

2

JOB NUMBER 0232, 002.95 REVIEWED BY EC&A, Lisa Scoralle DATE July 2002 REVISED April 2005 SHEET NO. 1 of 1



(TRACE#333/RG/280c05)

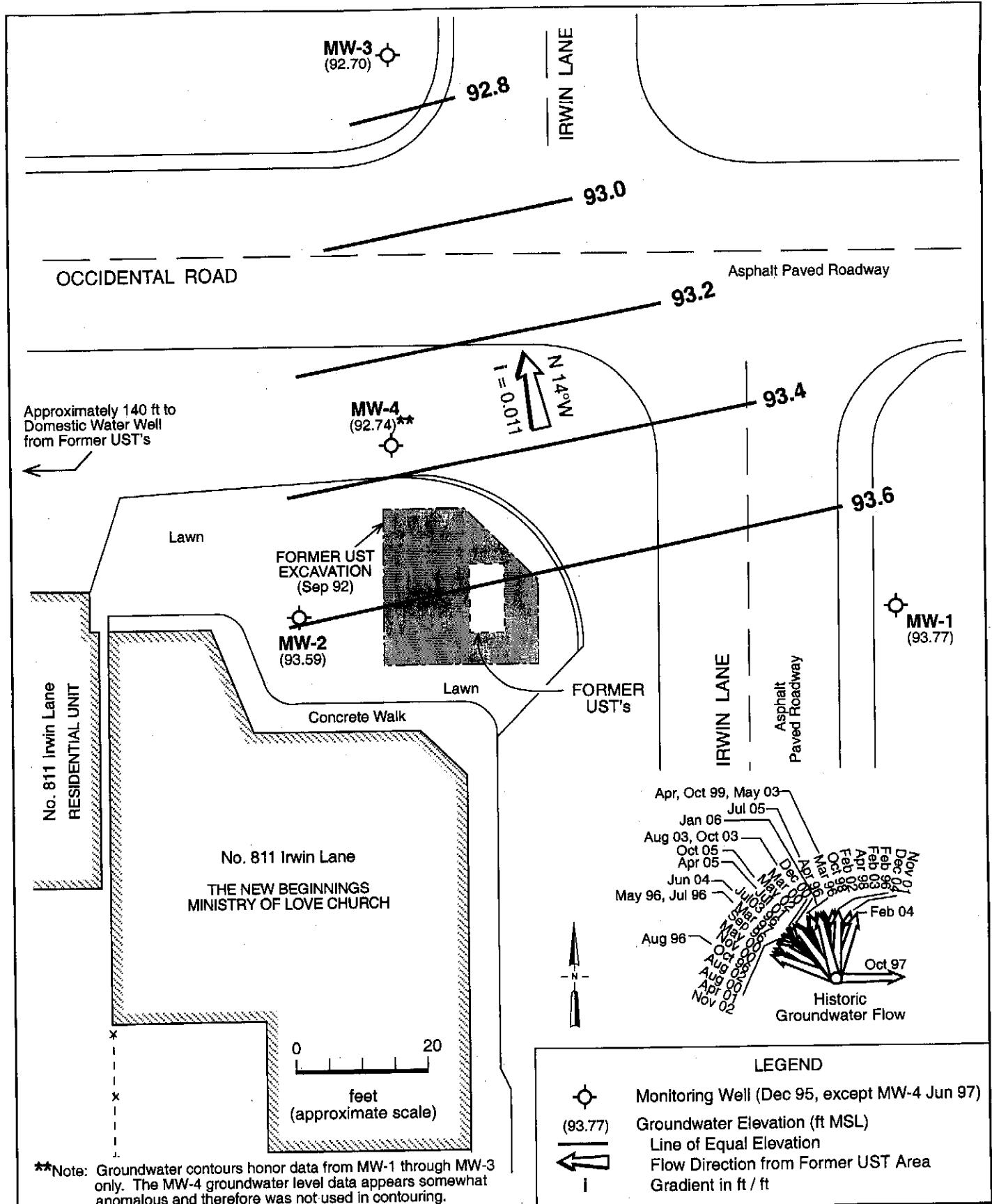
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### WELL LOCATION PLAN

811 Irwin Lane  
Santa Rosa, California

FIGURE  
3

JOB NUMBER	0232, 002.95	REVIEWED BY	EC&A, Chris Janiszewski	DATE	May 2001	REVISED DATE	May 2005
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**\*\*Note:** Groundwater contours honor data from MW-1 through MW-3 only. The MW-4 groundwater level data appears somewhat anomalous and therefore was not used in contouring.

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## GROUNDWATER ELEVATION MAP,

11 January 2006

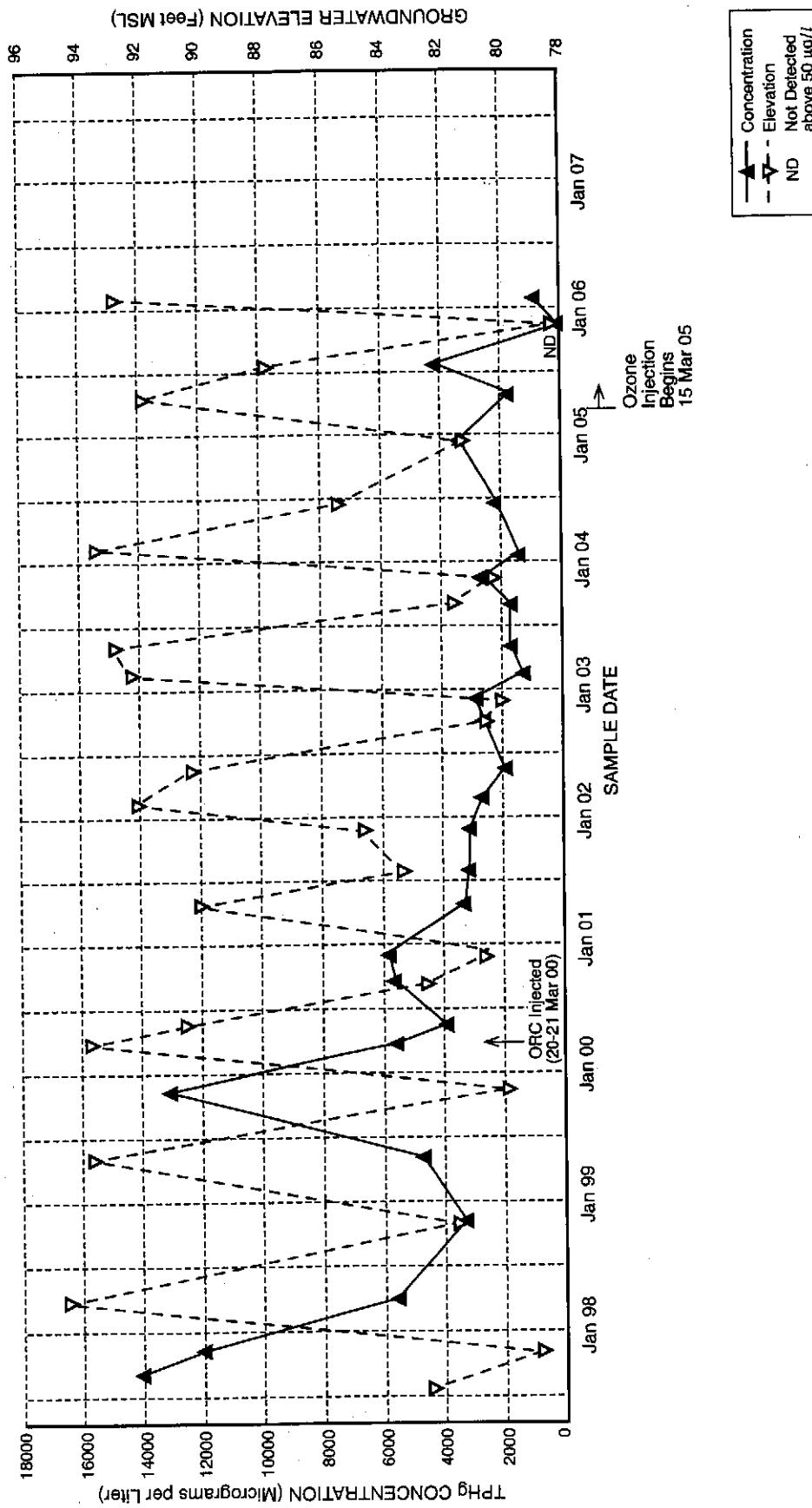
811 Irwin Lane  
Santa Rosa, California

## FIGURE

4

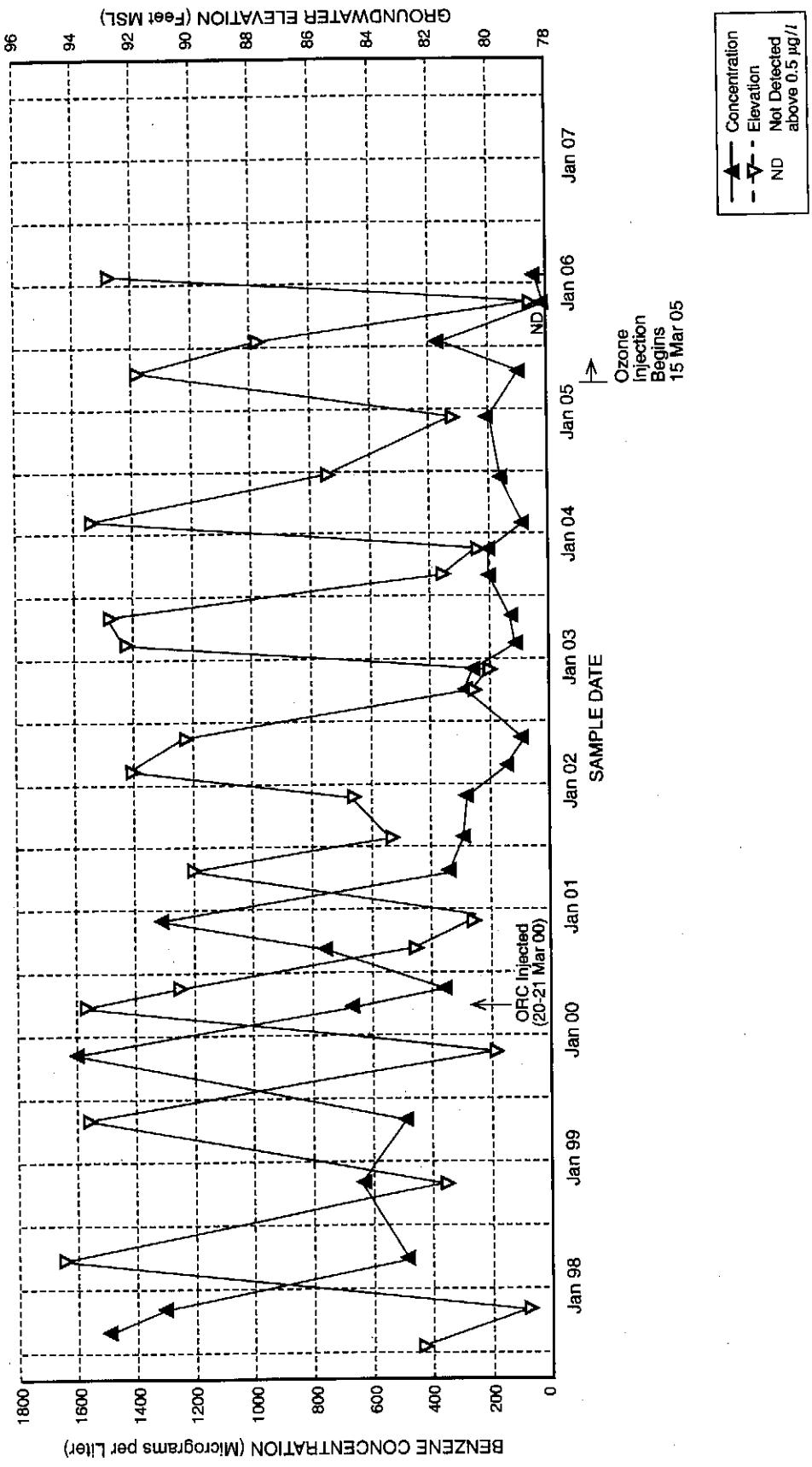
JOB NUMBER 0232, 002.95 REVIEWED BY EC&A, E.J. VandenBosch DATE May 2001 REVISED April 2006 SHEET NO. 1 of 1

CONCENTRATIONS of TPH<sub>g</sub>  
in Monitoring Well MW-4  
811 Irwin Lane  
Santa Rosa, California



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JOB NUMBER	REVIEWED BY	DATE	REVISED	DATE	SHEET NO.
TRACE#333/RG/06Apr06	EC&A, E.I. VandenBosch	May 2002	April 2006	May 2005	1 of 1



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811 Irwin Lane  
Santa Rosa, California

## FIGURE

**Table 1. Water Level Measurements**  
**811 Irwin Lane, Santa Rosa, California**

**Page 1 of 8**

<b>Well ID</b>	<b>TOC Elevation (MSL)</b>	<b>Screened Interval (ft bgs)</b>	<b>Date</b>	<b>DTW (TOC)</b>	<b>Groundwater Elevation (MSL)</b>
MW-1	96.47	7 - 22	02/09/96	1.48	94.99
MW-2	97.24	7 - 22	02/09/96	2.25	94.99
MW-3	96.34	7 - 22	02/09/96	1.66	94.68
Gradient = Due North, 0.004 ft/ft					
MW-1	96.47	7 - 22	03/08/96	1.12	95.35
MW-2	97.24	7 - 22	03/08/96	2.00	95.24
MW-3	96.34	7 - 22	03/08/96	1.34	95.00
Gradient = N21°W, 0.003 ft/ft					
MW-1	96.47	7 - 22	04/10/96	2.34	94.13
MW-2	97.24	7 - 22	04/10/96	3.36	93.88
MW-3	96.34	7 - 22	04/10/96	2.95	93.39
Gradient = N24°W, 0.007 ft/ft					
MW-1	96.47	7 - 22	05/10/96	4.81	91.66
MW-2	97.24	7 - 22	05/10/96	6.12	91.12
MW-3	96.34	7 - 22	05/10/96	5.58	90.76
Gradient = N50°W, 0.008 ft/ft					
MW-1	96.47	7 - 22	07/03/96	7.93	88.54
MW-2	97.24	7 - 22	07/03/96	9.45	87.79
MW-3	96.34	7 - 22	07/03/96	9.07	87.27
Gradient = N48°W, 0.012 ft/ft					
MW-1	96.47	7 - 22	07/23/96	9.84	86.63
MW-2	97.24	7 - 22	07/23/96	11.50	85.74
MW-3	96.34	7 - 22	07/23/96	11.17	85.17
Gradient = N50°W, 0.013 ft/ft					

**Table 1. Water Level Measurements**  
**811 Irwin Lane, Santa Rosa, California**

**Page 2 of 8**

Well ID	TOC Elevation (MSL)	Screened Interval (ft bgs)	Date	DTW (TOC)	Groundwater Elevation (MSL)
MW-1	96.47	7 - 22	08/29/96	13.00	83.47
MW-2	97.24	7 - 22	08/29/96	14.70	82.54
MW-3	96.34	7 - 22	08/29/96	14.32	82.02
Gradient = N54°W, 0.013 ft/ft					
MW-1	96.47	7 - 22	09/24/96	14.50	81.97
MW-2	97.24	7 - 22	09/24/96	16.07	81.17
MW-3	96.34	7 - 22	09/24/96	15.66	80.68
Gradient = N51°W, 0.012 ft/ft					
MW-1	96.47	7 - 22	10/24/96	15.03	81.44
MW-2	97.24	7 - 22	10/24/96	16.75	80.49
MW-3	96.34	7 - 22	10/24/96	16.30	80.04
Gradient = N57°W, 0.013 ft/ft					
MW-1	96.47	7 - 22	03/12/97	4.84	91.63
MW-2	97.24	7 - 22	03/12/97	6.01	91.23
MW-3	96.34	7 - 22	03/12/97	5.52	90.82
Gradient = N50°W, 0.013 ft/ft					
MW-1	96.47	7 - 22	10/02/97	19.99	76.48
MW-2	97.24	7 - 22	10/02/97	17.89	79.35
MW-3	96.34	7 - 22	10/02/97	17.46	78.88
MW-4	97.00	7 - 22	10/02/97	18.11	78.89
Gradient = Due East, 0.033 ft/ft					
MW-1	96.47	7 - 22	04/08/98	1.57	94.90
MW-2	97.24	7 - 22	04/08/98	2.48	94.76
MW-3	96.34	7 - 22	04/08/98	1.92	94.42
MW-4	97.00	7 - 22	04/08/98	2.61	94.39
Gradient = N10°W, 0.009 ft/ft					

**Table 1. Water Level Measurements**  
**811 Irwin Lane, Santa Rosa, California**

**Page 3 of 8**

Well ID	TOC Elevation (MSL)	Screened Interval (ft bgs)	Date	DTW (TOC)	Groundwater Elevation (MSL)
MW-1	96.47	7 - 22	10/13/98	13.65	82.82
MW-2	97.24	7 - 22	10/13/98	15.00	82.24
MW-3	96.34	7 - 22	10/13/98	14.75	81.59
MW-4	97.00	7 - 22	10/13/98	15.42	81.58
Gradient = N 16° W, 0.021 ft/ft					
MW-1	96.47	7 - 22	04/21/99	2.07	94.40
MW-2	97.24	7 - 22	04/21/99	3.12	94.12
MW-3	96.34	7 - 22	04/21/99	2.60	93.74
MW-4	97.00	7 - 22	04/21/99	3.24	93.76
Gradient = N 21°W, 0.0034 ft/ft					
MW-1	96.47	7 - 22	10/20/99	15.43	81.04
MW-2	97.24	7 - 22	10/20/99	16.81	80.43
MW-3	96.34	7 - 22	10/20/99	16.31	80.03
MW-4	97.00	7 - 22	10/20/99	17.02	79.98
Gradient = N 21°W, 0.0015 ft/ft					
MW-1	96.47	7 - 22	03/17/00	2.09	94.38
MW-2	97.24	7 - 22	03/17/00	3.01	94.23
MW-3	96.34	7 - 22	03/17/00	2.54	93.80
MW-4	97.00	7 - 22	03/17/00	3.14	93.86
Gradient = N 43°W, 0.007 ft/ft					
MW-1	96.47	7 - 22	05/09/00	4.60	91.87
MW-2	97.24	7 - 22	05/09/00	6.08	91.16
MW-3	96.34	7 - 22	05/09/00	5.94	90.40
MW-4	97.00	7 - 22	05/09/00	6.50	90.50
Gradient = N 55°W, 0.017 ft/ft					

**Table 1. Water Level Measurements**  
**811 Irwin Lane, Santa Rosa, California**

**Page 4 of 8**

Well ID	TOC Elevation (MSL)	Screened Interval (ft bgs)	Date	DTW (TOC)	Groundwater Elevation (MSL)
MW-1	96.47	7 - 22	08/07/00	12.51	83.96
MW-2	97.24	7 - 22	08/07/00	14.20	83.04
MW-3	96.34	7 - 22	08/07/00	13.90	82.44
MW-4	97.00	7 - 22	08/07/00	14.55	82.45
Gradient = N 63°W, 0.018 ft/ft					
MW-1	96.47	7 - 22	11/27/00	15.06	81.41
MW-2	97.24	7 - 22	11/27/00	16.23	81.01
MW-3	96.34	7 - 22	11/27/00	15.92	80.42
MW-4	97.00	7 - 22	11/27/00	16.54	80.46
Gradient = N 54°W, 0.012 ft/ft					
MW-1	96.47	7 - 22	12/11/00	15.21	81.26
MW-2	97.24	7 - 22	12/11/00	16.33	80.91
MW-3	96.34	7 - 22	12/11/00	16.03	80.31
Gradient = N 35°W, 0.008 ft/ft **					
MW-1	96.47	7 - 22	04/12/01	5.40	91.07
MW-2	97.24	7 - 22	04/12/01	6.74	90.50
MW-3	96.34	7 - 22	04/12/01	6.04	90.30
MW-4	97.00	7 - 22	04/12/01	6.96	90.04
Gradient = N 66°W, 0.009 ft/ft					
MW-1	96.47	7 - 22	07/16/01	11.59	84.88
MW-2	97.24	7 - 22	07/16/01	13.59	83.65
MW-3	96.34	7 - 22	07/16/01	12.99	83.35
MW-4	97.00	7 - 22	07/16/01	13.78	83.22
Gradient = N 45°W, 0.025 ft/ft					

**Table 1. Water Level Measurements**  
**811 Irwin Lane, Santa Rosa, California**

**Page 5 of 8**

Well ID	TOC Elevation (MSL)	Screened Interval (ft bgs)	Date	DTW (TOC)	Groundwater Elevation (MSL)
MW-1	96.47	7 - 22	11/26/01	11.19	85.28
MW-2	97.24	7 - 22	11/26/01	11.66	85.58
MW-3	96.34	7 - 22	11/26/01	11.96	84.38
MW-4	97.00	7 - 22	11/26/01	12.45	84.55
Gradient = N 13°E, 0.014 ft/ft **					
MW-1	96.47	7 - 22	02/06/02	3.67	92.80
MW-2	97.24	7 - 22	02/06/02	4.59	92.65
MW-3	96.34	7 - 22	02/06/02	4.34	92.00
MW-4	97.00	7 - 22	02/06/02	4.89	92.11
Gradient = N12°W, 0.008 ft/ft **					
MW-1	96.47	7 - 22	05/03/02	5.04	91.43
MW-2	97.24	7 - 22	05/03/02	6.50	90.74
MW-3	96.34	7 - 22	05/03/02	6.19	90.15
MW-4	96.91*	7 - 22	05/03/02	6.71	90.20
Gradient = N 44° W, 0.011 ft/ft **					
MW-1	96.47	7 - 22	08/30/02	14.51	81.96
MW-2	97.24	7 - 22	08/30/02	16.11	81.13
MW-3	96.34	7 - 22	08/30/02	15.67	80.67
MW-4	96.91	7 - 22	08/30/02	16.27	80.64
Gradient = N59°W, 0.017 ft/ft					
MW-1	96.47	7 - 22	11/13/02	15.14	81.33
MW-2	97.24	7 - 22	11/13/02	16.51	80.73
MW-3	96.34	7 - 22	11/13/02	16.31	80.03
MW-4	96.91	7 - 22	11/13/02	16.83	80.08
Gradient = N69°W, 0.016 ft/ft **					

**Table 1. Water Level Measurements**  
**811 Irwin Lane, Santa Rosa, California**

**Page 6 of 8**

Well ID	TOC Elevation (MSL)	Screened Interval (ft bgs)	Date	DTW (TOC)	Groundwater Elevation (MSL)
MW-1	96.47	7 - 22	02/06/03	3.62	92.85
MW-2	97.24	7 - 22	02/06/03	4.41	92.83
MW-3	96.34	7 - 22	02/06/03	4.31	92.03
MW-4	96.91	7 - 22	02/06/03	4.72	92.19
Gradient = N02°W, 0.01 ft/ft **					
MW-1	96.47	7 - 22	05/13/03	2.72	93.75
MW-2	97.24	7 - 22	05/13/03	3.79	93.45
MW-3	96.34	7 - 22	05/13/03	3.55	92.79
MW-4	96.91	7 - 22	05/13/03	4.01	92.90
Gradient = N22°W, 0.009 ft/ft **					
MW-1	96.47	7 - 22	08/26/03	13.43	83.04
MW-2	97.24	7 - 22	08/26/03	15.02	82.22
MW-3	96.34	7 - 22	08/26/03	14.74	81.60
MW-4	96.91	7 - 22	08/26/03	15.32	81.59
Gradient = N46°W, 0.013 ft/ft **					
MW-1	96.47	7 - 22	11/10/03	14.71	81.76
MW-2	97.24	7 - 22	11/10/03	16.16	81.08
MW-3	96.34	7 - 22	11/10/03	15.83	80.51
MW-4	96.91	7 - 22	11/10/03	16.49	80.42
Gradient = N44°W, 0.011 ft/ft **					
MW-1	96.47	7 - 22	02/04/04	2.58	93.89
MW-2	97.24	7 - 22	02/04/04	3.10	94.14
MW-3	96.34	7 - 22	02/04/04	3.17	93.17
MW-4	96.91	7 - 22	02/04/04	3.56	93.35
Gradient = N18°E, 0.0115 ft/ft **					

**Table 1. Water Level Measurements**  
**811 Irwin Lane, Santa Rosa, California**

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Well ID	TOC Elevation (MSL)	Screened Interval (ft bgs)	Date	DTW (TOC)	Groundwater Elevation (MSL)
MW-1	96.47	7 - 22	06/07/04	9.36	87.11
MW-2	97.24	7 - 22	06/07/04	11.16	86.08
MW-3	96.34	7 - 22	06/07/04	10.94	85.40
MW-4	96.91	7 - 22	06/07/04	11.49	85.42
Gradient = N49°W, 0.015 ft/ft **					
MW-1	96.47	7 - 22	12/21/04	14.47	82.00
MW-2	97.24	7 - 22	12/21/04	15.17	82.07
MW-3	96.34	7 - 22	12/21/04	15.26	81.08
MW-4	96.91	7 - 22	12/21/04	15.63	81.28
Gradient = N03°E, 0.012 ft/ft**					
MW-1	96.47	7 - 22	04/28/05	3.69	92.78
MW-2	97.24	7 - 22	04/28/05	4.94	92.30
MW-3	96.34	7 - 22	04/28/05	4.49	91.85
MW-4	96.91	7 - 22	04/28/05	5.01	91.90
Gradient = N41°W, 0.008 ft/ft**					
MW-1	96.47	7 - 22	07/07/05	7.39	89.08
MW-2	97.24	7 - 22	07/07/05	8.85	88.39
MW-3	96.34	7 - 22	07/07/05	8.81	87.53
MW-4	96.91	7 - 22	07/07/05	9.10	87.81
Gradient = N35°W, 0.014 ft/ft**					
MW-1	96.47	7 - 22	10/14/05	15.61	80.86
MW-2	97.24	7 - 22	10/14/05	17.18	80.06
MW-3	96.34	7 - 22	10/14/05	17.14	79.20
MW-4	96.91	7 - 22	10/14/05	18.47	78.44
Gradient = N38°W, 0.015 ft/ft**					

**Table 1. Water Level Measurements**  
**811 Irwin Lane, Santa Rosa, California**

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Well ID	TOC Elevation (MSL)	Screened Interval (ft bgs)	Date	DTW (TOC)	Groundwater Elevation (MSL)
MW-1	96.47	7 - 22	01/11/06	2.70	93.77
MW-2	97.24	7 - 22	01/11/06	3.65	93.59
MW-3	96.34	7 - 22	01/11/06	3.64	92.70
MW-4	96.91	7 - 22	01/11/06	4.19	92.72
<b>Gradient = N14°W, 0.011 ft/ft**</b>					

**Notes**

TOC: Top of well casing

MSL: Referenced in feet relative to mean sea level

ft bgs: Feet below ground surface

DTW: Depth to water in feet from top of well casing

\*: On May 1, 2002, all four wells were re-surveyed after monitoring well MW-4 was repaired by trimming the casing slightly.

\*\*: Gradient was calculated using data from MW-1, MW-2 and MW-3 only; groundwater-level data for MW-4 appears to be somewhat anomalous and therefore was not used in contouring

**Table 2.** Analytical Results - Groundwater Samples from Monitoring Wells  
811 Irwin Lane, Santa Rosa, California

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811 Irwin Lane, Santa Rosa, California**

Sample ID	Date	DTW (ft bgs)	TPHg ( $\mu\text{g/l}$ )	Benzene ( $\mu\text{g/l}$ )	Toluene ( $\mu\text{g/l}$ )	Ethyl- benzene ( $\mu\text{g/l}$ )	Total Xylenes ( $\mu\text{g/l}$ )	MTBE ( $\mu\text{g/l}$ )	1,2-DCA ( $\mu\text{g/l}$ )	DIPE ( $\mu\text{g/l}$ )	TBA ( $\mu\text{g/l}$ )
MW-2 continued											
02/06/02 <sup>2</sup>	02/06/02 <sup>2</sup>	4.59	ND	ND	ND	ND	ND	ND	ND	ND	ND
05/03/02 <sup>4</sup>	05/03/02 <sup>4</sup>	6.50	ND	ND	ND	ND	ND	ND	NA	ND	ND
08/30/02 <sup>2</sup>	16.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11/13/02 <sup>2</sup>	16.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
02/06/03 <sup>2</sup>	4.41	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
05/13/03 <sup>2</sup>	3.79	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
08/26/03 <sup>2</sup>	15.02	ND	ND	ND	ND	0.54	2.0	ND	ND	ND	ND
11/10/03 <sup>2</sup>	16.16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
02/04/04 <sup>2</sup>	3.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
06/07/04 <sup>2</sup>	11.16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/21/04 <sup>2</sup>	15.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
04/28/05 <sup>2</sup>	4.94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
07/07/05 <sup>2</sup>	8.85	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/14/05 <sup>2</sup>	17.18	ND	ND	ND	ND	ND	ND	ND	3.3	ND	ND
01/11/06 <sup>2</sup>	<b>3.65</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>
MW-3											
01/03/96 <sup>1</sup>	7.7	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
04/10/96 <sup>1</sup>	2.95	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
07/23/96 <sup>1</sup>	11.17	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
10/24/96	16.30	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
03/12/97	5.52	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
03/17/00	2.54	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA

**Table 2. Analytical Results - Groundwater Samples from Monitoring Wells  
811 Irwin Lane, Santa Rosa, California**

Sample ID	Date	DTW (ft bgs)	TPHg ( $\mu\text{g/l}$ )	Benzene ( $\mu\text{g/l}$ )	Toluene ( $\mu\text{g/l}$ )	Ethy- benzene ( $\mu\text{g/l}$ )	Total Xylenes ( $\mu\text{g/l}$ )	MTBE ( $\mu\text{g/l}$ )	1,2-DCA ( $\mu\text{g/l}$ )	DIPE ( $\mu\text{g/l}$ )	TBA ( $\mu\text{g/l}$ )
MW-3 continued	05/09/00	5.94	ND	ND	ND	ND	ND	ND	NA	NA	NA
	08/07/00	13.90	ND	ND	ND	ND	ND	ND	NA	NA	NA
	11/27/00 <sup>2</sup>	15.92	ND	ND	0.51	ND	1.7	ND<1.0	ND	16	ND
	04/12/01 <sup>2</sup>	6.04	ND	ND	ND	ND	ND	ND	ND	3.4	ND
	11/26/01 <sup>2</sup>	11.96	ND	ND	ND	ND	ND	ND	ND	5.1	ND
	02/06/02 <sup>2</sup>	4.34	ND	ND	ND	ND	ND	ND	ND	20	ND
	08/30/02 <sup>2</sup>	15.67	ND	ND	ND	ND	ND	ND	ND	5.3	ND
	02/06/03 <sup>2</sup>	4.31	ND	ND	ND	ND	ND	ND	ND	16	ND
	08/26/03 <sup>2</sup>	14.74	ND	ND	ND	0.52	1.8	ND	ND	9.5	ND
	02/04/04 <sup>2</sup>	3.17	ND	ND	ND	ND	ND	ND	ND	5.5	ND
	12/21/04 <sup>2</sup>	15.26	ND	ND	ND	ND	ND	ND	ND	4.2	ND
	07/07/05 <sup>2</sup>	8.81	ND	ND	ND	ND	ND	ND	ND	21	ND
	<b>01/11/06<sup>2</sup></b>	<b>3.64</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>4.6</b>	<b>ND</b>
MW-4	07/07/97	14.59	14,000	1500	63	460	1,300	ND<260	NA	NA	NA
	10/02/97	18.11	12,000 <sup>a</sup>	1300	26	260	320	ND<160	NA	NA	NA
	03/11/98	17.85	5700 <sup>a</sup>	500	11	150	130	ND<30	NA	NA	NA
	10/13/98	15.42	3300 <sup>a</sup>	610	16	110	76	ND<20	NA	NA	NA
	04/21/99 <sup>2</sup>	3.24	4700 <sup>a</sup>	500	20	200	300	ND<10	150	ND	ND
	10/20/99 <sup>2</sup>	17.02	13,000 <sup>a</sup>	1600	38	260	240	ND<5.0	91	ND	95
	03/17/00 <sup>2</sup>	3.14	5700 <sup>a</sup>	630	25	250	430	ND<2.5	38	ND<2.5	ND<35
	05/09/00 <sup>2</sup>	6.50	3900 <sup>a</sup>	370	11	83	140	ND<1	35	ND	46

**Table 2. Analytical Results - Groundwater Samples from Monitoring Wells  
811 Irwin Lane, Santa Rosa, California**

Sample ID	Date	DTW (ft bgs)	TPHg ( $\mu\text{g/l}$ )	Benzene ( $\mu\text{g/l}$ )	Toluene ( $\mu\text{g/l}$ )	Ethyl- benzene ( $\mu\text{g/l}$ )	Total Xylenes ( $\mu\text{g/l}$ )	MTBE ( $\mu\text{g/l}$ )	1,2-DCA ( $\mu\text{g/l}$ )	DIPE ( $\mu\text{g/l}$ )	TBA ( $\mu\text{g/l}$ )
MW-4 continued											
11/27/00 <sup>2</sup>	14.55	5800 <sup>a</sup>	770	18	180	180	ND<20	NA	NA	NA	NA
04/12/01 <sup>2</sup>	16.54	5900 <sup>a</sup>	1300	22	180	62	ND	120	ND	ND	ND
07/11/01 <sup>2</sup>	6.96	3400 <sup>a</sup>	350	15	110	170	ND	33	ND	ND	ND
11/26/01 <sup>2</sup>	13.78	3100 <sup>a</sup>	290	8.0	81	56	ND<2.5	41	ND	ND	ND<12.5
02/06/02 <sup>2</sup>	12.45	3100 <sup>a</sup>	280	7.9	64	28	ND	43	ND	49	ND
05/03/02 <sup>4</sup>	4.89	2700 <sup>a</sup>	150	6.7	51	40	ND	21	ND	17	ND
08/30/02 <sup>2</sup>	6.71	1900 <sup>a</sup>	98	4.5	42	39	ND	NA	ND	26	ND
11/13/02 <sup>2</sup>	16.27	2400 <sup>a</sup>	280	9.2	98	45	ND<1	50	ND	63	ND
02/06/03 <sup>2</sup>	16.83	2800 <sup>a</sup>	240	8.6	84	37	ND	43	ND	52	ND
05/13/03 <sup>2</sup>	4.01	1800 <sup>a</sup>	130	5.5	72	80	ND	15	ND	15	ND
08/26/03 <sup>2</sup>	15.32	1800 <sup>a</sup>	200	6.5	85	44	ND	48	ND	49	ND
11/10/03 <sup>2</sup>	16.49	2300 <sup>a</sup>	200	7.9	110	63	ND	42	ND	51	ND
02/04/04 <sup>2</sup>	3.56	1400 <sup>a</sup>	82	3.5	64	80	ND	13	ND	49	ND
06/07/04 <sup>2</sup>	11.49	2100 <sup>a</sup>	160	6.7	84	90	ND<1.0	19	ND<1.0	20	ND
12/21/04 <sup>2</sup>	15.63	3400 <sup>a</sup>	200	7.4	53	77	ND	34	ND	24	ND
04/28/05 <sup>2</sup>	5.01	1700 <sup>a</sup>	89	4.0	57	73	ND<0.5	19	ND<0.5	7.4	ND
07/07/05 <sup>2</sup>	9.10	4100 <sup>a</sup>	360	12	190	330	ND<1.0	48	ND<1.0	67	ND
10/14/05 <sup>2</sup>	18.47	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
01/11/06 <sup>2</sup>	4.19	890 <sup>a</sup>	31	2.0	42	90	ND	6.3	ND	ND	ND
Reporting Limits		50	0.5	0.5	0.5	5.0 <sup>3</sup>	0.5 to 1.0	0.5 to 1.0	0.5 to 1.0	5.0	

**Table 2. Analytical Results - Groundwater Samples from Monitoring Wells  
811 Irwin Lane, Santa Rosa, California**

<u>Notes:</u>										
DTW:	Depth to water from top of well casing	a:	Unmodified or weakly modified gasoline is significant							
TPHg	Total petroleum hydrocarbons as gasoline	b:	Heavier gasoline range compounds are significant (aged gasoline?)							
MTBE:	Methyl tert-butyl ether; analyzed by EPA Method 8020 unless otherwise noted	i:	Liquid sample that contains greater than ~5 vol. % sediment							
1,2-DCA:	1,2-dichloroethane	j:	No recognizable pattern							
DIPE:	Di-isopropyl ether	l:	Sample also analyzed for total lead; result was ND							
TBA:	t-Butyl alcohol	2:	Sample also analyzed for MTBE and other gasoline oxygenates and the lead scavengers ethylene dibromide (EDB) and 1,2-DCA by Analytical Method SW8260B. Results not reported above were all ND							
ft bgs:	Feet below ground surface	3:	MTBE detection limit by Analytical Method SW8260B is either 0.5 µg/l or 1.0 µg/l							
µg/l :	Micrograms per liter	4:	Sample also analyzed for MTBE and other gasoline oxygenates by Analytical Method SW8260B. Except for results reported above, all analytes were ND							
ND:	Not detected above the reporting limit									
NA:	Not analyzed									
NS:	Not sampled									

**Table 3. Analytical Results - Groundwater Samples from Water-supply Wells  
811 Irwin Lane, Santa Rosa, California**

Sample ID	Date	TPHg ( $\mu\text{g/l}$ )	Benzene ( $\mu\text{g/l}$ )	Toluene ( $\mu\text{g/l}$ )	Ethyl-benzene ( $\mu\text{g/l}$ )	Total Xylenes ( $\mu\text{g/l}$ )	MTBE ( $\mu\text{g/l}$ )	EDB ( $\mu\text{g/l}$ )	1,2-DCA ( $\mu\text{g/l}$ )	THF ( $\mu\text{g/l}$ )
DW-1	10/05/92 <sup>1</sup>	ND	ND	ND	ND	ND	NA	NA	NA	NA
DW-1	06/08/93 <sup>1</sup>	ND	ND	ND	ND	ND	NA	NA	NA	NA
DW-1	07/14/93 <sup>1</sup>	NA	NA	NA	NA	NA	NA	NA	NA	NA
DW-1	08/03/93 <sup>1</sup>	NA	NA	NA	NA	NA	NA	NA	NA	NA
DW-1	01/03/96 <sup>1</sup>	ND	NA	NA	NA	NA	NA	NA	NA	NA
DW-1	04/10/96 <sup>1</sup>	ND	ND	ND	ND	ND	8.6*	NA	NA	NA
RS-1	04/23/96 <sup>1</sup>	ND	ND	ND	ND	ND	7.3	NA	NA	NA
DW-1	07/23/96 <sup>1</sup>	ND	ND	ND	ND	ND	ND	NA	NA	NA
DW-1	10/24/96	ND	ND	ND	ND	ND	ND	NA	NA	NA
DW-1	03/12/97	ND	ND	ND	ND	ND	ND	NA	NA	NA
DW-1	10/02/97	ND	ND	ND	ND	ND	ND	NA	NA	NA
DW-1	03/11/98	ND	ND	ND	ND	ND	ND	NA	NA	NA
DW-1	10/13/98	ND	ND	ND	ND	ND	ND	NA	NA	NA
DW-1	04/21/99	ND	ND	ND	ND	ND	ND	NA	NA	NA
DW-1	07/13/99	ND	ND	ND	ND	ND	ND	ND	ND	ND
DW-1	10/20/99	ND	ND	ND	ND	ND	ND	NA	NA	NA
DW-1	05/09/00 <sup>2</sup>	ND	ND	ND	ND	ND	2.1	ND	ND	NA
DW-1	11/27/00 <sup>2</sup>	ND	ND	ND	ND	ND	1.8	ND	ND	NA
DW-1	12/11/00 <sup>2</sup>	ND	ND	ND	ND	ND	1.9	ND	ND	NA
DW-1	12/13/00 <sup>2</sup>	ND	ND	ND	ND	ND	1.4	ND	ND	NA
DW-1	01/08/01 <sup>2</sup>	ND	ND	ND	ND	ND	1.2	ND	ND	NA

**Table 3.** Analytical Results - Groundwater Samples from Water-supply Wells  
811 Irwin Lane, Santa Rosa, California

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811 Irwin Lane, Santa Rosa, California



**Table 3. Analytical Results - Groundwater Samples from Water-supply Wells  
811 Irwin Lane, Santa Rosa, California**

Sample ID	Date	TPHg ( $\mu\text{g/l}$ )	Benzene ( $\mu\text{g/l}$ )	Toluene ( $\mu\text{g/l}$ )	Ethyl-benzene ( $\mu\text{g/l}$ )	Total Xylenes ( $\mu\text{g/l}$ )	MTBE ( $\mu\text{g/l}$ )	EDB ( $\mu\text{g/l}$ )	1,2-DCA ( $\mu\text{g/l}$ )	THF ( $\mu\text{g/l}$ )
DW-4	12/11/00 <sup>2</sup>	ND	ND	ND	ND	ND	2.0	ND	ND	NA
DW-5	07/11/01 <sup>2</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NA
DW-6	02/06/02	ND	ND	ND	ND	ND	ND	ND	ND	NA
DW-7	02/06/02	ND	ND	ND	ND	ND	ND	ND	ND	NA
Reporting Limits		50	0.5	0.5	0.5	0.5	5.0 <sup>3</sup>	0.5 to 1.0	0.5 to 1.0	0.5

Notes

TPHg: Total petroleum hydrocarbons as gasoline

MTBE: Methyl tert-butyl ether by EPA Method 8020 unless noted otherwise; reporting limit 5.0  $\mu\text{g/l}$

EDB: Ethylene dibromide by Analytical Method SW8260B

1,2-DCA: 1,2-dichloroethane by Analytical Method SW8260B

THF: Tetrahydrofuran by Analytical Method SW8260B

$\mu\text{g/l}$ : Micrograms per liter

ND: Not detected above the reporting limit

NA: Not analyzed

NS: Not sampled; well inaccessible

DW-1: Onsite domestic water well - destroyed on March 19, 2002

DW-1A: Onsite domestic water well - installed in January 2002 to replace DW-1

DW-2: Offsite domestic water well located at 795 Irwin Lane

DW-3: Offsite domestic water well located at 4810 Occidental Road - installed in 1981 and currently inactive.

DW-4: Newly discovered offsite domestic water well located at 4810 Occidental Road - installed in 1961 and currently inactive.

DW-5: Offsite domestic water well located at 817 Irwin Lane

DW-6: Out-of-service water-supply well located at 4815 Occidental Road

DW-7: Out-of-service water-supply well located at 4815 Occidental Road

\*: MTBE confirmed by Analytical Method SW8260B at 9.1  $\mu\text{g/l}$

<sup>1</sup>: Sample also analyzed for total lead. Organic lead at 1.3 milligrams per liter ( $\text{mg/l}$ ) was reported in the sample collected on June 8, 1993, and total lead at 0.0052  $\text{mg/l/g}$  was reported in the sample collected on July 14, 1993; all other results were ND.

<sup>2</sup>: Sample also analyzed for MTBE and other gasoline oxygenates and the lead scavengers EDB and 1,2-DCA by Analytical Method SW8260B. Results not reported above were all ND.

<sup>3</sup>: MTBE detection limit by Analytical Method SW8260B is either 0.5  $\mu\text{g/l}$  or 1  $\mu\text{g/l}$

<sup>4</sup>: Sample also analyzed for MTBE and other gasoline oxygenates and the lead scavengers EDB and 1,2-DCA, as well as volatile organics by Analytical Method SW8260B. Methyl ethyl ketone was reported at 11  $\mu\text{g/l}$ .

**Table 3. Analytical Results - Groundwater Samples from Water-supply Wells  
811 Irwin Lane, Santa Rosa, California**

Notes, continued

- 5: Sample analyzed for volatile organics by Analytical Method SW8260B. Methyl ethyl ketone (MEK, or 2-butanone) was reported at 4.6 µg/l.  
6: Sample also analyzed for MTBE and other gasoline oxygenates and the lead scavengers EDB and 1,2-DCA, as well as volatile organics by Analytical Method SW8260B. All analytes were ND.
- 7: Sample also analyzed for MTBE and other gasoline oxygenates by Analytical Method SW8260B. All analytes were ND.
- 8: Sample also analyzed for MTBE and other gasoline oxygenates and the lead scavengers EDB and 1,2-DCA, as well as volatile organics by Analytical Method SW8260B. In addition to THF results reported above, 2-butanone (MEK) was detected at 1.9 µg/l.
- 9: Sample also analyzed for volatile organics by Analytical Method SW8260B. Except for THF results reported above, all analytes were ND.
- 10: Sample also analyzed for MTBE and other gasoline oxygenates and the lead scavengers EDB and 1,2-DCA, as well as volatile organics by Analytical Method SW8260B. Except for THF results reported above, all analytes were ND.
- 11: Sample also analyzed for MTBE and other gasoline oxygenates and the lead scavengers EDB and 1,2-DCA, as well as volatile organics by Analytical Method SW8260B. All analytes were ND.
- 12: Sample also analyzed for MTBE and other gasoline oxygenates and the lead scavengers EDB and 1,2-DCA, as well as volatile organics by Analytical Method SW8260B. In addition to THF results reported above, chloroform was detected at 1.6 µg/l.
- 13: Sample also analyzed for MTBE and other gasoline oxygenates and the lead scavengers EDB and 1,2-DCA by Analytical Method SW8260B. Results for all analytes were ND.

**Table 4. Monitoring Well Groundwater Results for Dissolved Oxygen Measurements  
811 Irwin Lane, Santa Rosa, California**

Well ID	Date	Depth to Water (feet)	Temperature (°F)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	System Clock (Total Hours)
MW-1	06/07/04	9.36	64.9	NM	0.23	NR
	12/21/04	14.47	64.6	159	0.85	NR
	03/16/05	NM	64.0	NM	1.56	16.16
	03/17/05	NM	64.0	NM	1.41	24.23
	03/24/05	NM	63.9	NM	0.54	84.31
	03/31/05	NM	64.0	NM	0.25	105.41
	04/06/05	NM	65.3	NM	1.00	166.77
	04/14/05	NM	65.4	NM	1.11	147.15
	04/28/05 *	3.69	NM	25	NM	591.31
	05/12/05	NM	65.2	NM	1.05	879.91
	06/03/05	NM	65.1 <sup>(1)</sup>	NM	1.83	1138.43
		NM	64.5 <sup>(2)</sup>	NM	0.73	--
	07/07/05 *	7.39	66.2	177	4.80	NR
	07/26/05	NM	65.7	NM	0.69	2244.80
	09/21/05	NM	66.1	NM	0.55	3378.44
	01/11/06 *	2.70	64.6	78	0.88	4775.76

**Table 4. Monitoring Well Groundwater Results for Dissolved Oxygen Measurements  
811 Irwin Lane, Santa Rosa, California**

Well ID	Date	Depth to Water (feet)	Temperature (°F)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	System Clock (Total Hours)
MW-2	06/07/04	11.16	63.8	87	0.52	NR
	12/21/04	15.17	64.6	87	0.15	NR
	03/16/05	NM	65.4	NM	1.15	16.16
	03/17/05	NM	65.8	NM	1.10	24.23
	03/24/05	NM	64.9	NM	0.61	84.31
	03/31/05	NM	65.0	NM	0.41	105.41
	04/06/05	NM	62.5 <sup>(2)</sup>	NM	1.27	166.77
		NM	59.6 <sup>(1)</sup>	NM	2.60	--
	4/14/05	NM	63.1	NM	1.13	147.15
04/28/05 *	4.94	62.1	139	0.33	591.31	
05/12/05	NM	63.3	NM	2.65	879.91	
06/03/05	NM	62.1 <sup>(1)</sup>	NM	6.34	1138.43	
	NM	62.4 <sup>(2)</sup>	NM	5.51	--	
07/07/05 *	8.85	63.7	190	2.45	NR	
07/26/05	NM	63.1	NM	5.25	2244.80	
09/21/05	NM	66.3	NM	4.31	3378.44	
10/14/05 *	17.18	69.0	167	3.04	NR	
01/11/06 *	3.65	64.1	89	0.36	4775.76	

**Table 4. Monitoring Well Groundwater Results for Dissolved Oxygen Measurements  
811 Irwin Lane, Santa Rosa, California**

Well ID	Date	Depth to Water (feet)	Temperature (°F)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	System Clock (Total Hours)
MW-3	06/07/04	10.94	64.5	NM	0.12	NR
	12/21/04	15.26	66.5	69	0.29	NR
03/16/05	NM	65.5	NM	0.17	16.16	
03/17/05	NM	65.6	NM	0.15	24.23	
03/24/05	NM	65.1	NM	0.14	84.31	
03/31/05	NM	65.1	NM	0.15	105.41	
04/06/05	NM	65.4	NM	0.13	166.77	
04/14/05	NM	65.6	NM	0.15	147.15	
04/28/05*	4.49	NM	14	NM	591.31	
05/12/05	NM	64.8	NM	0.12	879.91	
06/03/05	NM	65.0 <sup>(1)</sup>	NM	1.80	1138.43	
	NM	65.6 <sup>(2)</sup>	NM	0.08	—	
07/07/05 *	8.81	67.2	178	0.08	NR	
07/26/05	NM	65.5	NM	0.11	2244.80	
09/21/05	NM	66.9	NM	0.12	3378.44	
01/11/06 *	3.64	66.6	73	0.30	4775.76	

**Table 4. Monitoring Well Groundwater Results for Dissolved Oxygen Measurements  
811 Irwin Lane, Santa Rosa, California**

Well ID	Date	Depth to Water (feet)	Temperature (°F)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	System Clock (Total Hours)
MW-4	06/07/04	11.49	64.9	8	0.17	NR
	12/21/04	15.63	66.7	8	0.13	NR
	03/16/05	NM	64.1	NM	0.15	16.16
	03/17/05	NM	64.0	NM	0.13	24.23
	03/24/05	NM	64.2	NM	0.13	84.31
	03/31/05	NM	64.4	NM	0.13	105.41
	04/06/05	NM	64.4 <sup>(2)</sup>	NM	0.08	166.77
		NM	62.6 <sup>(1)</sup>	NM	0.14	--
	04/14/05	NM	64.5	NM	0.10	147.15
	04/28/05*	5.01	65.2	-42	0.17	591.31
05/12/05	NM	64.5	NM	0.38	879.91	
	NM	65.6 <sup>(1)</sup>	NM	1.20	1138.43	
	NM	65.4 <sup>(2)</sup>	NM	0.45	--	
	07/07/05 *	9.10	67.1	154	0.57	NR
07/26/05	NM	65.3	NM	NM	2244.80	
09/21/05	NM	67.1	NM	0.98	3378.44	
10/14/05 *	18.47	69.2	62	5.70	NR	
01/11/06 *	4.19	69.2	12	0.31	4775.76	

**Table 4. Monitoring Well Groundwater Results for Dissolved Oxygen Measurements**  
**811 Irwin Lane, Santa Rosa, California**

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<u>Notes</u>
°F: Degrees Fahrenheit
mg/l: Milligrams per liter
mV: Millivolts
DO: Dissolved oxygen
ORP: Oxidation reduction potential
*: Combined O&M and quarterly sampling event
NM: Not measured
NR: Not recorded
(1): DO and temperature measurements collected from ±2 ft below the top of the water column
(2): DO and temperature measurements collected from ±2 ft above the bottom of the well casing

**Table 5. Ozone System Operation & Maintenance Log**  
**811 Irwin Lane, Santa Rosa, California**

Date	Comments
06/07/04	Baseline readings prior to system start-up (down-hole probe @ 22 feet below ground surface [bgs])
12/21/04	Second set of baseline readings
03/15/05	Complete system installation; system start-up; program; check for leaks
03/16/05	System off; reset; replace 3B well-head valve
03/17/05	System running; check for leaks
03/24/05	System on rest cycle during programmed run time; ozone not tripped; manually start system
03/31/05	System on rest cycle when programmed to start; reset and reprogram timer; manually start; check for leaks
04/06/05	System running; manually restart; reprogram timer; high groundwater level (~1 ft bgs)
04/14/05	System running; high groundwater table (~1-2 ft bgs)
04/27-28/05	System turned off (4/27) for combined O&M and quarterly sampling event(4/28); check for leaks; dust buildup noted in panel, suggest raising panel
05/12/05	System running; monitor
05/19/05	System down; main power switch melt down. Rewire main power switch and restart.
06/02-03/05	Raised and remounted panel ±4 ft above grade, DO readings taken from ±2 ft below top of water column and ± 2 ft above bottom of well casing; system running; clean panel and intake tube
07/07/05	Quarterly sampling event with O&M data (DO and ORP readings) taken during purging
07/26/05	System running; check for leaks; vacuum panel, clean intake hose
08/18/05	System running; check pressures; shut system down to install auto restart module; start up & test panel; clean compressor; new tenant reports panel too noisy, suggest enclosing in cabinet
09/21/05	System running; open compressor, spray with Teflon and reassemble; clean intake tube
10/28/05	System running; reprogram timer (70 minute run times per cycle)
11/21/05	System down; SP-4 blown out at well head, SP-6 a+b blown out at well head; remove compressor for rebuilding
12/06/05	System down; install rebuilt compressor, replace six leaking check valves, tighten all mechanical connections, replace inlet fan filter, check timer; all shallow SPs are running 1 min run times
12/22/05	Rebuild compressor (bearing) for reinstallment
12/28/05	Re-install rebuilt compressor; needs new fan; pressure check, replace three check valves
01/11/06	Quarterly sampling event with O&M data (DO and ORP readings) taken during purging
1/16-18/06	System running without SP-4 and SP-6 a+b; dig out SP-4 to 42 inches bgs, cut case down, backfill with bentonite chips and neat cement concrete in new well box and asphalt 30"x40" area around well box, re-plumb SP-4, up run times

**Table 6. Groundwater Sampling Schedule for 2006  
811 Irwin Lane, Santa Rosa, California**

Well	January	February	March	April	May	June	July	August	September	October	November	December
MW-1	X						X					
MW-2	X			X			X				X	
MW-3	X						X					
MW-4	X			X			X				X	
DW-1A	X			X			X				X	
DW-2							X					
DW-3	X			X			X				X	

DW-1A: Onsite domestic water well, 811 Irwin Lane

DW-2: Offsite domestic water well located at 795 Irwin Lane (Former Bank Club); not currently in use

DW-3: Offsite domestic water well located at 4810 Occidental Road, adjacent to subject property

All samples will be analyzed for total petroleum hydrocarbons as gasoline by Analytical Method SW8015Cm, benzene, toluene, ethylbenzene and xylenes by Analytical Method SW8021B, and methyl tert-butyl ether and other gasoline oxygenates and lead scavengers by Analytical Method 8260B.

## **Appendix A**

### **Groundwater Field Logs**

# DAILY FIELD RECORD

Page 1 of \_\_\_\_\_

Project and Task Number:	0232	Date:	1/11/06
Project Name:	Richard Winterhalder	Field Activity:	Ground water Monitoring
Location:	811 IRWIN Lane	Weather:	
Time of OVM Calibration:		Cloudy /overcast	

Name	Company	Time In	Time Out
C.Hute	ECTA		

DRUM#	DESCRIPTION/CONTENT/AMOUNT/QUANTITY	LOCATION
1	1-full	Behind church

TIME	ACTIVITY	TIME SPENT
	Load	mw-1,3,24,
	Depart	
	Onsite, Open all wells	MW-1 2.70
	Set up decon	MW-2 3.65
	Take DTWS	MW-3 3.64
	Calc GWF logs	MW-4 4.19
	Begin purging wells in order	
	Allow time for recharge	
	TAKE Post Purge DTW's	
	Begin Sampling wells in order	
	Close and lock all wells	
	Clean up Site	
	Depart	
	Office and Paperwork	HR meter 4775.76
		watt meter 03490



FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER	<input type="checkbox"/> SURFACE WATER	<input type="checkbox"/> DOMESTIC WATER	<input type="checkbox"/> IRRIGATION WATER	<input type="checkbox"/> WELL DEVELOPMENT
Project No: 0232			Field point name: MW-1	
Global ID: T0609700371			Well depth from TOC: 22	
Project location: 811 IRWIN Lane			Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:	
Date: 1/11/06			Product level from TOC: ND	
Time:			Water level from TOC: 2.70	
Recorded by: C. Hute			Screened interval: 7-22	
Purge time (duration):			Well elevation (TOC): 96.47	

WEATHER

Wind: 0-5 mph	Precip. in last 5 days: yes
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VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 19.30	<input type="checkbox"/> 6" well = 1.47 gal/ft	Gallons in 1 well volume: 3.28
<input type="checkbox"/> 4" well = 0.66 gal/ft	<input type="checkbox"/> " well = gal/ft	Total gallons removed: 9.9 Well volumes removed: 3

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
EC:					

FIELD MEASUREMENTS

Time	pH	EC ms	Temp °F	ORP mV	D O mg/l	Case Volume gal.	Appearance
6.18	18.17	64.1	86	1.20	1/ 3.3		Low Turb no odor no sheen
6.23	18.47	64.6	97	.97	2/ 6.6		
6.45	18.56	64.6	78	1.88	3/ 9.9		
					1		

Notes:

Water level after purging below TOC:	80% of original water level below TOC:	yes
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Water level before sampling below TOC:	2.76	Time: 4:40
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Appearance of sample:			
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<input type="checkbox"/> Bailer:	Type:	GPM:	<input checked="" type="checkbox"/> Pump: ES48 Type: Submersible	GPM: 1-2
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<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse
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Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates
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EPA Method:				8260			
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Other:			
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LABORATORY:	<input checked="" type="checkbox"/> McCampbell Analytical	<input type="checkbox"/> Other:
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FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER	<input type="checkbox"/> SURFACE WATER	<input type="checkbox"/> DOMESTIC WATER	<input type="checkbox"/> IRRIGATION WATER	<input type="checkbox"/> WELL DEVELOPMENT
Project No: 0232	Field point name: MW-2			
Global ID: T0609700371	Well depth from TOC: 22			
Project location: 811 IRWIN Lane	Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:			
Date: 1/11/06	Product level from TOC: ND			
Time:	Water level from TOC: 3.65			
Recorded by: C. Hute	Screened interval: 7-22			
Purge time (duration):	Well elevation (TOC): 97.24			

WEATHER

Wind: 0-5 mph	Precip. in last 5 days: yes
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VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft <b>18.35</b>	<input type="checkbox"/> 6" well = 1.47 gal/ft	Gallons in 1 well volume: <b>3.12</b>
<input type="checkbox"/> 4" well = 0.66 gal/ft	<input type="checkbox"/> " well = gal/ft	Total gallons removed: <b>9.3</b> Well volumes removed: <b>3</b>

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
EC:					

FIELD MEASUREMENTS

Time	pH	EC us	Temp °F	ORP mV	D O mg/l	Case Volume gal.	Appearance
7.12	582.1	63.0	69	.80	1/ 3.1		low turb no odor nosheen
8.12	601.2	63.5	72	.54	2/ 6.2		
8.45	632.7	64.1	89	.36	3/ 9.3		
					1		

Notes:	

Water level after purging below TOC:	80% of original water level below TOC:	yes
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Water level before sampling below TOC:	3.71	Time: 5:10
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Appearance of sample:			
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<input type="checkbox"/> Bailer:	Type:	GPM:	<input checked="" type="checkbox"/> Pump: ES-90	Type: Submersible	GPM: 1-2
<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse		

Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates
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EPA Method:		8060	
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Other:	
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LABORATORY:	<input checked="" type="checkbox"/> McCampbell Analytical	<input type="checkbox"/> Other:
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FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER	<input type="checkbox"/> SURFACE WATER	<input type="checkbox"/> DOMESTIC WATER	<input type="checkbox"/> IRRIGATION WATER	<input type="checkbox"/> WELL DEVELOPMENT
Project No: 0232	Field point name: MW-3			
Global ID: T0609700371	Well depth from TOC: 22			
Project location: 811 IRWIN Lane	Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:			
Date: 1/11/06	Product level from TOC: ND			
Time:	Water level from TOC: 3.64			
Recorded by: C. Hute	Screened interval: 7-22			
Purge time (duration):	Well elevation (TOC): 96.34			

WEATHER

Wind: 0-5 mph	Precip. in last 5 days: yes
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VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 18.36	<input type="checkbox"/> 6" well = 1.47 gal/ft	Gallons in 1 well volume: 3.12
<input type="checkbox"/> 4" well = 0.66 gal/ft	<input type="checkbox"/> " well = gal/ft	Total gallons removed: 9.3 Well volumes removed: 3

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
EC:					

FIELD MEASUREMENTS

Time	pH	EC us	Temp °F	ORP mV	D O mg/l	Case Volume gal.	Appearance
8/6	423.2	65.2	65	.88	1/ 3.1	Low Turb	no odor no sheen
7.73	473.3	66.0	68	.52	2/ 6.2		
7.52	482.5	66.6	73	.30	3/ 9.3		

Notes:			

Water level after purging below TOC:	80% of original water level below TOC:	yes
--------------------------------------	--	-----

Water level before sampling below TOC:	3.68	Time: 4:50
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Appearance of sample:		
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<input type="checkbox"/> Bailer:	Type:	GPM:	<input checked="" type="checkbox"/> Pump: ES-48	Type: Submersible	GPM: 0-2
<input type="checkbox"/> Dedicated:	Type:	GPM:		Decontamination method: Liquinox wash, double rinse	

Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates
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EPA Method:		8260		
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Other:	
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LABORATORY:	<input checked="" type="checkbox"/> McCampbell Analytical	<input type="checkbox"/> Other:
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FIELD LOG

<input checked="" type="checkbox"/> GROUNDWATER	<input type="checkbox"/> SURFACE WATER	<input type="checkbox"/> DOMESTIC WATER	<input type="checkbox"/> IRRIGATION WATER	<input type="checkbox"/> WELL DEVELOPMENT
Project No: 0232	Field point name: MW-4			
Global ID: T0609700371	Well depth from TOC: 22			
Project location: 811 IRWIN Lane	Well diameter: <input checked="" type="checkbox"/> 2" <input type="checkbox"/> 4 " <input type="checkbox"/> 6" <input type="checkbox"/> Other:			
Date: 1/11/06	Product level from TOC: ND			
Time:	Water level from TOC: 4.19			
Recorded by: C. Hute	Screened interval: 7-22			
Purge time (duration):	Well elevation (TOC): 96.47			

WEATHER

Wind: 0-5 mph	Precip. in last 5 days: yes
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VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

<input checked="" type="checkbox"/> 2" well = 0.17 gal/ft 17.81	<input type="checkbox"/> 6" well = 1.47 gal/ft	Gallons in 1 well volume:	3.03
<input type="checkbox"/> 4" well = 0.66 gal/ft	<input type="checkbox"/> " well = gal/ft	Total gallons removed: 9.0	Well volumes removed: 3

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
EC:					

FIELD MEASUREMENTS

Time	pH	EC µS	Temp °F	ORP mV	D O mg/l	Case Volume gal.	Appearance
6.87	1110	66.2	67	.79	1/3.0	Low turb	No odor no sheen
6.65	895.2	67.5	39	.42	2/6.0		
6.54	899.3	69.2	12	.31	3/9.0		
					1		

Notes:			

Water level after purging below TOC:	80% of original water level below TOC:	925
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Water level before sampling below TOC:	4.23	Time: 5:00
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Appearance of sample:			
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<input type="checkbox"/> Bailer:	Type:	GPM:	<input checked="" type="checkbox"/> Pump: ES-40	Type: Submersible	GPM: 0-2
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<input type="checkbox"/> Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse		
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Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> 7 oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates
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EPA Method:		8260		
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Other:		
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LABORATORY:	<input checked="" type="checkbox"/> McCampbell Analytical	<input type="checkbox"/> Other:
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FIELD LOG

Onsite Domestic

<input checked="" type="checkbox"/> GROUNDWATER	<input type="checkbox"/> SURFACE WATER	<input type="checkbox"/> DOMESTIC WATER	<input type="checkbox"/> IRRIGATION WATER	<input type="checkbox"/> WELL DEVELOPMENT
Project No: 0232		Field point name: DW-1A		
Global ID: T0609700371		Well depth from TOC:		
Project location: 811 IRWIN Lane		Well diameter: <input type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:		
Date: 1/11/06		Product level from TOC:		
Time:		Water level from TOC:		
Recorded by: C. Hute		Screened interval:		
Purge time (duration):		Well elevation (TOC):		

WEATHER

Wind: 0-5 mph	Precip. in last 5 days: yes
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VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

<input type="checkbox"/> 2" well = 0.17 gal/ft	<input type="checkbox"/> 6" well = 1.47 gal/ft	Gallons in 1 well volume:	
<input type="checkbox"/> 4" well = 0.66 gal/ft	<input type="checkbox"/> " well = gal/ft	Total gallons removed: 150-	Well volumes removed:

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
EC:					

FIELD MEASUREMENTS

Time	pH	EC	Temp °F	ORP mV	D O mg/l	Case Volume gal.	Appearance
					1/		
					2/		
					3/		
					/		

Notes: Run Pump for 15 min Prior to Collecting Sample  
 Collect Sample from Hose Bib By mixing tank (Post H2O treatment  
 with Chlorine)

Water level after purging below TOC:	80% of original water level below TOC:
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Water level before sampling below TOC:	
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Appearance of sample:	Time: 5:20
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<input type="checkbox"/> Bailer:	Type:	GPM:	<input type="checkbox"/> Pump: ES-	Type: Submersible	GPM: 1 - 2
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<input checked="" type="checkbox"/> Dedicated:	Type:	GPM: 10-15	Decontamination method: Liquinox wash, double rinse		
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Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input type="checkbox"/> TPPhd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> 7 oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates
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EPA Method:				8260			
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Other:	
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LABORATORY:	<input checked="" type="checkbox"/> McCampbell Analytical	<input type="checkbox"/> Other:
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FIELD LOG

4810 Occidental

<input checked="" type="checkbox"/> GROUNDWATER	<input type="checkbox"/> SURFACE WATER	<input checked="" type="checkbox"/> DOMESTIC WATER	<input type="checkbox"/> IRRIGATION WATER	<input type="checkbox"/> WELL DEVELOPMENT
Project No: 0232	Field point name: DW-3			
Global ID: T0609700371	Well depth from TOC:			
Project location: 811 IRWIN Lane	Well diameter: <input type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> Other:			
Date: 1/11/06	Product level from TOC:			
Time:	Water level from TOC:			
Recorded by: C. Hute	Screened interval:			
Purge time (duration):	Well elevation (TOC):			

WEATHER

Wind: 0-5 mph	Precip. in last 5 days: yes
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VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

<input type="checkbox"/> 2" well = 0.17 gal/ft	<input type="checkbox"/> 6" well = 1.47 gal/ft	Gallons in 1 well volume:
<input type="checkbox"/> 4" well = 0.66 gal/ft	<input type="checkbox"/> " well = gal/ft	Total gallons removed: 150-225 Well volumes removed:

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
EC:					

FIELD MEASUREMENTS

Time	pH	EC	Temp °F	ORP mV	D O mg/l	Case Volume gal.	Appearance
					1/		
					2/		
					3/		
					/		

Notes: Run Pump for 15 min Prior to Collecting Sample  
Collect Sample from Hose Bib by well house

Water level after purging below TOC:	80% of original water level below TOC:
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Water level before sampling below TOC:	Time: 5:30
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Appearance of sample:	Time: 5:30
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<input type="checkbox"/> Bailer:	Type:	GPM:	<input type="checkbox"/> Pump: ES-	Type: Submersible	GPM: 1 - 2
<input checked="" type="checkbox"/> Dedicated:	Type:	GPM: 10-15	Decontamination method: Liquinox wash, double rinse		

Sample analysis:	<input checked="" type="checkbox"/> TPHg	<input type="checkbox"/> TPHd	<input type="checkbox"/> TPH	<input checked="" type="checkbox"/> BTEX	<input checked="" type="checkbox"/> 7 oxygenates	<input checked="" type="checkbox"/> Lead scavengers	<input type="checkbox"/> VOCs	<input type="checkbox"/> Nitrates
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EPA Method:				8260			
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Other:	
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LABORATORY:	<input checked="" type="checkbox"/> McCampbell Analytical	<input type="checkbox"/> Other:
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# **Appendix B**

## **Analytical Laboratory Report**

RECEIVED  
JAN 27 2006  
BY:



McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
Website: www.mccampbell.com E-mail: main@mccampbell.com

Edd Clark & Associates, Inc. 320 Professional Center Ste. 215 Rohnert Park, CA 94928	Client Project ID: #0232  Client Contact: Cole Hute  Client P.O.:	Date Sampled: 01/11/06  Date Received: 01/12/06  Date Reported: 01/17/06  Date Completed: 01/25/06
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WorkOrder: 0601190

January 25, 2006

Dear Cole:

Enclosed are:

- 1). the results of **6** analyzed samples from your #0232 project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Best regards,

Angela Rydelius, Lab Manager



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Edd Clark & Associates, Inc. 320 Professional Center Ste. 215 Rohnert Park, CA 94928	Client Project ID: #0232  Client Contact: Cole Hute  Client P.O.:	Date Sampled: 01/11/06  Date Received: 01/12/06  Date Extracted: 01/14/06  Date Analyzed: 01/14/06
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### **Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\***

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0601190

\* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram: sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant (aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.


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Edd Clark & Associates, Inc.  320 Professional Center Ste. 215  Rohnert Park, CA 94928	Client Project ID: #0232	Date Sampled: 01/11/06
		Date Received: 01/12/06
	Client Contact: Cole Hute	Date Extracted: 01/14/06
	Client P.O.:	Date Analyzed: 01/14/06

**Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0601190

Lab ID	0601190-001B	0601190-002B	0601190-003B	0601190-004B	Reporting Limit for DF =1	
Client ID	MW-1	MW-2	MW-3	MW-4		
Matrix	W	W	W	W	ug/kg	ug/L
DF	1	1	1	1	S	W
Compound	Concentration					
tert-Amyl methyl ether (TAME)	ND	ND	ND	ND	NA	0.5
t-Butyl alcohol (TBA)	ND	ND	ND	ND	NA	5.0
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND	6.3	NA	0.5
Diisopropyl ether (DIPE)	ND	ND	4.6	ND	NA	0.5
Ethanol	ND	ND	ND	ND	NA	50
Ethyl tert-butyl ether (ETBE)	ND	ND	ND	ND	NA	0.5
Methanol	ND	ND	ND	ND	NA	500
Methyl-t-butyl ether (MTBE)	ND	ND	ND	ND	NA	0.5

**Surrogate Recoveries (%)**

%SS1:	104	104	104	100	
Comments					

\* water and vapor samples are reported in ug/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in ug/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.



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Edd Clark & Associates, Inc.  320 Professional Center Ste. 215  Rohnert Park, CA 94928	Client Project ID: #0232	Date Sampled: 01/11/06
		Date Received: 01/12/06
	Client Contact: Cole Hute	Date Extracted: 01/14/06
	Client P.O.:	Date Analyzed: 01/14/06

## Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0601190

Lab ID	0601190-005B				Reporting Limit for DF =1
Client ID	DW-1A				
Matrix	W				
DF	I				S      W

Compound	Concentration				ug/kg	ug/L
tert-Amyl methyl ether (TAME)	ND				NA	0.5
t-Butyl alcohol (TBA)	ND				NA	5.0
1,2-Dibromoethane (EDB)	ND				NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.5
Diisopropyl ether (DIPE)	ND				NA	0.5
Ethanol	ND				NA	50
Ethyl tert-butyl ether (ETBE)	ND				NA	0.5
Methanol	ND				NA	500
Methyl-t-butyl ether (MTBE)	ND				NA	0.5

## Surrogate Recoveries (%)

%SS1:	104				
Comments					

\* water and vapor samples are reported in ug/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in ug/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.



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Edd Clark & Associates, Inc.  320 Professional Center Ste. 215  Rohnert Park, CA 94928	Client Project ID: #0232	Date Sampled: 01/11/06
		Date Received: 01/12/06
	Client Contact: Cole Hute	Date Extracted: 01/19/06
	Client P.O.:	Date Analyzed: 01/19/06

**Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0601190

Lab ID	0601190-006B				Reporting Limit for DF =1
Client ID	DW-3				
Matrix	W				
DF	1				S W
<b>Compound</b>	<b>Concentration</b>			ug/kg	μg/L
tert-Amyl methyl ether (TAME)	ND			NA	0.5
t-Butyl alcohol (TBA)	ND			NA	5.0
1,2-Dibromoethane (EDB)	ND			NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND			NA	0.5
Diisopropyl ether (DIPE)	ND			NA	0.5
Ethanol	ND			NA	50
Ethyl tert-butyl ether (ETBE)	ND			NA	0.5
Methanol	ND			NA	500
Methyl-t-butyl ether (MTBE)	ND			NA	0.5

**Surrogate Recoveries (%)**

%SS1:	107				
Comments					

\* water and vapor samples are reported in μg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in μg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.



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## QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0601190

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 19858		Spiked Sample ID: 0601191-002A				
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) <sup>E</sup>	ND	60	110	107	2.79	109	107	1.65	70 - 130	70 - 130
MTBE	ND	10	93.4	94.4	1.00	91.4	93.1	1.91	70 - 130	70 - 130
Benzene	ND	10	97.8	91.7	6.49	91.4	91.7	0.284	70 - 130	70 - 130
Toluene	ND	10	97.4	91.9	5.82	91.5	91.4	0.115	70 - 130	70 - 130
Ethylbenzene	ND	10	99.5	94.5	5.10	94.5	94.2	0.398	70 - 130	70 - 130
Xylenes	ND	30	100	95.3	4.78	95.3	95.3	0	70 - 130	70 - 130
%SS:	103	10	101	98	2.86	99	98	0.551	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

### BATCH 19858 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0601190-001A	1/11/06 4:40 AM	1/14/06	1/14/06 8:33 PM	0601190-002A	1/11/06 5:10 AM	1/14/06	1/14/06 9:06 PM
0601190-003A	1/11/06 4:50 AM	1/14/06	1/14/06 9:38 PM	0601190-004A	1/11/06 5:00 AM	1/14/06	1/14/06 10:10 PM
0601190-005A	1/11/06 5:20 AM	1/14/06	1/14/06 10:43 PM	0601190-006A	1/11/06 5:30 AM	1/14/06	1/14/06 11:15 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

<sup>E</sup> TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



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## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0601190

EPA Method: SW8260B		Extraction: SW5030B			BatchID: 19853			Spiked Sample ID: 0601178-002B		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
tert-Amyl methyl ether (TAME)	ND	10	96.3	101	4.57	98.1	101	2.51	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	50	85.2	90.7	6.18	94.3	97.3	3.21	70 - 130	70 - 130
1,2-Dibromoethane (EDB)	ND	10	96.9	97.4	0.537	103	105	1.83	70 - 130	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	95.9	97.9	2.08	108	110	1.20	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	10	102	103	0.659	105	109	2.91	70 - 130	70 - 130
Ethanol	ND	500	89.5	99.7	10.7	93.7	95.9	2.35	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	86.4	88.7	2.61	100	103	2.87	70 - 130	70 - 130
Methanol	ND	2500	97.4	97.7	0.326	100	98.6	1.80	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	82.7	87.4	5.49	100	104	3.81	70 - 130	70 - 130
%SS1:	97	10	99	98	1.46	98	99	1.13	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

### BATCH 19853 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0601190-001B	1/11/06 4:40 AM	1/14/06	1/14/06 11:13 AM	0601190-002B	1/11/06 5:10 AM	1/14/06	1/14/06 11:55 AM
0601190-003B	1/11/06 4:50 AM	1/14/06	1/14/06 12:38 PM	0601190-004B	1/11/06 5:00 AM	1/14/06	1/14/06 1:20 PM
0601190-005B	1/11/06 5:20 AM	1/14/06	1/14/06 2:02 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (\text{MS-Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

DHS Certification No. 1644

 QA/QC Officer



**McCampbell Analytical, Inc.**

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## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0601190

EPA Method: SW8260B		Extraction: SW5030B			BatchID: 19934			Spiked Sample ID: 0601272-005B		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
tert-Amyl methyl ether (TAME)	ND	10	108	104	3.51	102	106	4.01	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	50	113	106	5.77	98.6	100	1.76	70 - 130	70 - 130
1,2-Dibromoethane (EDB)	ND	10	106	103	2.68	106	102	3.79	70 - 130	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	117	113	4.08	112	112	0	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	10	122	116	4.91	115	117	1.60	70 - 130	70 - 130
Ethanol	ND	500	124	113	9.70	120	111	7.42	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	107	103	3.84	103	104	0.373	70 - 130	70 - 130
Methanol	ND	2500	128	124	3.60	96.6	109	11.7	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	99.9	97.5	2.50	96.8	96.8	0	70 - 130	70 - 130
%SS1:	107	10	96	99	3.15	98	96	2.75	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

### BATCH 19934 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0601190-006B	1/11/06 5:30 AM	1/19/06	1/19/06 11:34 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery =  $100 * (\text{MS-Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

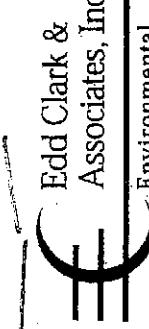
N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

DHS Certification No. 1644

QA/QC Officer



0601190  
ECAR

Edd Clark &  
Associates, Inc.

## Chain of Custody Report

P.O. Box 3039, Rohnert Park, CA 94927  
Tel: (707) 792-9500 (800) 474-1448 Fax: (707) 792-9504

Samplers Signature: C. Huie

**McCAMPBELL ANALYTICAL, INC.**

1110 Second Avenue South, #D7  
Pacheco, CA 94553-5560  
(925) 798-1620

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

WorkOrder: 0601190 ClientID: ECAR EDF: YES

Report to: Cole Hute TEL: (707)792-9500  
Edd Clark & Associates, Inc. FAX: (707)792-9504  
320 Professional Center Ste. 215 ProjectNo: #0232  
Rohnert Park, CA 94928 PO:Bill to: Accounts Payable  
Edd Clark & Associates, Inc.  
320 Professional Center Ste.215  
Rohnert Park, CA 94928

5 days

Requested TAT:

5 days

Date Received: 01/12/2006

Date Printed: 01/19/2006

**Requested Tests (See legend below)**

Sample ID	ClientSampleID	Matrix	Collection Date	Hold	1	2	3	4	5	6	7	8	9	10	11	12
0601190-001	MW-1	Water	1/11/06 4:40:00 AM	<input type="checkbox"/>												
0601190-002	MW-2	Water	1/11/06 5:10:00 AM	<input type="checkbox"/>												
0601190-003	MW-3	Water	1/11/06 4:50:00 AM	<input type="checkbox"/>												
0601190-004	MW-4	Water	1/11/06 5:00:00 AM	<input type="checkbox"/>												
0601190-005	DW-1A	Water	1/11/06 5:20:00 AM	<input type="checkbox"/>												
0601190-006	DW-3	Water	1/11/06 5:30:00 AM	<input type="checkbox"/>												

**Test Legend:**

1	9-OXYS_W	2	G-MBTEx_W	3	PREDF REPORT	4		5
6		7		8		9		10
11		12						

1	9-OXYS_W	2	G-MBTEx_W	3	PREDF REPORT	4		5	
6		7		8		9		10	
11		12							

1	9-OXYS_W	2	G-MBTEx_W	3	PREDF REPORT	4		5	
6		7		8		9		10	
11		12							

1	9-OXYS_W	2	G-MBTEx_W	3	PREDF REPORT	4		5	
6		7		8		9		10	
11		12							

Comments: GI# T06097003719-oxy's added 1/19/06 on 006 5 day

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Prepared by: Melissa Valles

## **APPENDIX C**

### **Ozone System O&M Logs**

## EC&amp;A OPERATIONS AND MAINTENANCE LOG

Page 1 of \_\_\_\_\_

Project and Task Number:	0232	Date:	1/16/06	1/17/06	1/18/06
Project Name:	WINTER HAZER	Project Location:	811 IRWIN LANE		
Name:	CHRIS J Cole H	Company:	EC&A	In:	Out:

TIME	DESCRIPTION OF WORK PERFORMED
	SYSTEM RUNNING WITHOUT SP-4 3 SP6 & 3B DIG OUT SP-4 TO 42 INCHES BGS CUT CASE DOWN BACK FILL WITH BENTONITE CHIPS 3 NEAT CEMENT CONCRETE IN NEW WELL BOX AND ASPHALT 30"X40" AREA AROUND WELL BOX. Replumb SP-4 UP RUN TINES

(1) ROLLER RENTAL  
WITH O2SS

Well ID											
Temp °F											
DO mg/L											
Sys clock	SP-1	SP-2	SP-3	SP-4	SP-5	SP-6	SP-7	SP-8	SP-9	SP-10	
4/8/06	41	43	45	0	35	OFF	22	46	OFF	26	1 BAG BENTONITE 3 BAGS CEMENT 1-1/2" WELL BOX

(2) JACK HAMMER

✓

## EC&amp;A OPERATIONS AND MAINTENANCE LOG

Page 1 of \_\_\_\_\_

Project and Task Number:	0232	Date:	12/28/05
Project Name:	WINTER HAZER	Project Location:	811 IRWIN LANE
Name:	CHRIS J	Company:	In:      Out:

TIME	DESCRIPTION OF WORK PERFORMED
	REINSTALL REBUILT COMPRESSOR NEED FAN (EAST OR INNER SIDE) PRESSURE CHECK REPLACE 3 CHECK VALVES

ELECTRIC METER 03273

Well ID											
Temp °F		NO	DO	TANK	SYSTEM	DOWN					
DO mg/L											
Sys clock	SP-1	SP-2	SP-3	SP-4	SP-5	SP-6	SP-7	SP-8	SP-9	SP-10	
4/4/06	40	43	46	31	25	32	20	46	37	34	✓ CHECK VALVES PISTON

# **EC&A OPERATIONS AND MAINTENANCE LOG**

Page 1 of 1

## **EC&A OPERATIONS AND MAINTENANCE LOG**

Page 1 of \_\_\_\_\_

Project and Task Number: 0232		Date: 12/6/05
Project Name: WINTER HAZARD		Project Location: 811 IRWIN LANE
Name:	Company: CCTA	In:      Out:
TIME	DESCRIPTION OF WORK PERFORMED	
	SYSTEM DOWN	
	INSTALL REBUILT COMPRESSOR	
	REPLACE 6 LEANING CHECK VALVES	
	TIGHTEN ALL MECHANICAL CONNECTIONS	
	REPLACE INLET FAN FILTER	
	(V) TIMER	
	ALL SHARCON SP ARE RUNNING 1 MIN RUN TIMES	

## EC&amp;A OPERATIONS AND MAINTENANCE LOG

Page 1 of \_\_\_\_\_

Project and Task Number:	0232	Date:	11/21/05								
Project Name:	WINTER HAZER	Project Location:	811 IRWIN LN								
Name:	CHRIS J	Company:	ECHA								
TIME		In:	Out:								
	SYSTEM DOWN, 25 OUT OF COMPRESSOR										
	SP-4 BLOWN OUT AT WELL HEAD										
	SP-6 a+b BLOWN OUT AT WELL HEAD										
	Remove compress. for rebuild										
Well ID											
Temp °F											
DO mg/L											
Sys clock 11:53 AM	SP-1	SP-2	SP-3	SP-4	SP-5	SP-6	SP-7	SP-8	SP-9	SP-10	